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WITH RESPECTS OF
LEVI L. BARBOUR.

SEMI-CENTENNIAL
OF THE
ADMISSION
OF THE
STATE OF MICHIGAN
INTO THE UNION.

Addresses

DELIVERED AT ITS CELEBRATION, JUNE 15, 1886.

DETROIT FREE PRESS PRINTING COMPANY.
1886.

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PREFATORY REMARKS.

BY COMMISSION.

Wisely considering Michigan's development and advancement during this half century worthy of commemoration, her Legislature adopted the following joint resolution providing for the celebration of the semi-centennial of her admission into the Union.

In accordance with the spirit and provisions of such joint resolution, Henry Chamberlain, Henry Fralick, Theodore H. Hinchman, James Shearer and S. T. Read were appointed and confirmed Commissioners, and, with the Governor, were empowered to determine upon a day and to make all proper and suitable provision for celebrating such semi-centennial.

Messrs. Thomas M. Cooley, James V. Campbell, Alpheus Felch, Ebenezer O. Grosvenor, Charles D. Lawton, William L. Webber, Charles W. Garfield, James W. Bartlett, James B. Angell, Edwin Willits, J. M. B. Sill, Levi L. Barbour, John H. Bissell, W. C. Ransom, R. H. Horr, John Robertson, John J. Adam, the gentlemen selected to address the people on that occasion, most cheerfully and fitly responded to the invitations extended to them. Upon the subjects severally assigned them, they delivered most interesting and instructive addresses, graphically portraying the progress of our State. The facts presented are more cogent than theory, however specious.

The Commission selected the subjects for addresses with refer-

ence to presenting, in their treatment, the State's civil, judicial, financial and military history; her educational, reformatory and charitable institutions; her railroads, varied industries and resources.

To the many thousands attendant, these cultured, mature, practical and distinguished gentlemen presented these matters so important and vital to the State; and for the benefit of the people at large, the Commission deem those addresses eminently worthy of publication.

At the request of the Commission, Hon. Alpheus Felch has placed at its disposal the address by him delivered before the Legislative Association; and the same is herewith presented, as supplying an important feature in the programme of the celebration.

Whatever is, should show its right to be. The justification for this volume will be found in its subjects, contents, and the need of disseminating the information it contains.

Michigan may feel a just pride in her progress, attainments and prospects.

The official programme, with the words and music (both original and selected), is herewith presented.

We submit this volume with the assurance that the reader will feel a quickened and growing interest in the State of his nativity or adoption.

JOINT RESOLUTION.

STATE OF MICHIGAN.—File No. 13.—Senate.—No. 19.

Introduced by Senator SIERWOOD, February 23, 1885. Reported without amendments by Committee on Appropriations and Finance, and ordered printed, March 13, 1885.

JOINT RESOLUTION relating to the semi-centennial celebration of the admission of the State of Michigan into the Union.

Whereas, We are near the period when this State will pass the fiftieth anniversary of its admission into the union of States, and in view of the great changes wrought, the wonderful developments and rapid advancement made, during this half century, and while there still remain among us many of those who have contributed so much towards these magnificent results, and by whose wisdom the destiny of this commonwealth has been directed, and for whom we have such great admiration and respect, therefore,

Resolved by the Senate and House of Representatives of the State of Michigan, That His Excellency the Governor be and hereby is authorized and requested to appoint five commissioners, the same to be confirmed by the Senate, and that said commissioners be empowered to determine upon a day and to make all proper and suitable provisions for celebrating the semi-centennial of the admission of the State of Michigan into the Union; and that a sum not exceeding five thousand dollars be and hereby is appropriated from the general fund, so much of which as may be necessary to be used by said commissioners for such celebration.

And further, That His Excellency the Governor is hereby appointed to act with said commissioners, and shall be the president of such Commission, and shall keep an accurate account of all expenses and disbursements of the same, and shall present vouchers for the same duly certified by him to the Auditor General, who shall thereupon draw his warrant or warrants on the State Treasurer for such sums as may be necessary within said appropriation. Said commissioners will serve without compensation, but their actual expenses shall be allowed and paid out of said appropriation.

Ordered to take immediate effect.

Approved May 11th, 1885.

OFFICIAL PROGRAMME

WITH

WORDS AND MUSIC OF THE SEMI-CENTENNIAL ANNIVERSARY
OF THE STATE OF MICHIGAN,

HELD AT LANSING, JUNE 15, 1886.

*Pursuant to an Act of the last Legislature, and under the management of a
Board of Commissioners, appointed by the Governor.*

BOARD OF COMMISSIONERS.

Governor R. A. ALGER, Chairman of the Board of Commissioners,
President of the Day.

HON. HENRY CHAMBERLAIN.....Three Oaks.

HON. HENRY FRALICK.....Grand Rapids

HON. THEO. H. HINCHMANDetroit.

HON. JAMES SHEARER .. Bay City

HON. S. T. READ.....Cassopolis.

A National Salute will be fired at sunrise.

A Semi-Centennial Salute will be fired at noon.

Papers will be read and speeches made during the day by the
following prominent citizens:

HON. ALPHEUS FELCH.

HON. JOHN J. ADAM.

PRES. JAMES B. ANGELL.

HON. THOMAS M. COOLEY.

HON. JAMES V. CAMPBELL,

HON. E. O. GROSVENOR.

HON. CHAS. D. LAWTON.

HON. WM. L. WEBBER.

HON. CHAS. W. GARFIELD.

PRES. EDWIN WILLITS.

PROF. J. M. B. SILL.

L. L. BARBOUR, ESQ.

JOHN H. BISSELL, ESQ.

MAJOR W. C. RANSOM.

JAMES W. BARTLETT, ESQ.

GENERAL JNO. ROBERTSON.

Also voluntary addresses, if time will permit.

Instrumental music for the day will be furnished by the follow-
ing bands:

Twenty-third U. S. Infantry Band of Fort Wayne.....Detroit.

Knights of Pythias Band.....Lansing.

Cassopolis Military Band.Cassopolis.

And vocal music by the "Arion Quartette of Detroit, Mesdames Clemelli of New York, and Tilden of Mt. Clemens, and the following from Lansing: A chorus of 80 mixed voices, the Lansing "Liederkrantz" of 20 male voices, and a chorus of 130 children from the public schools. The whole under the management of Prof. H. B. Roney, East Saginaw.

The exercises of the day will commence at 10 A. M. with an "Address of Welcome," from the steps of the Capitol, by Governor R. A. Alger.

Immediately after the Governor's address, and continuing throughout the forenoon, papers will be read and speeches delivered in Representative Hall, in the Senate Chamber, and from the steps of the Capitol, by some of the gentlemen named above, interspersed with music.

At 12:30 P. M. a *barbecue* and *grand basket picnic* will be held on the fair grounds. Meat, potatoes, bread, butter, coffee, sugar and milk, will be furnished to all applicants without charge. These articles the guests will call for at the carving table. Abundant table room will also be supplied, but no dishes, plates, knives, forks or cups.

At 2 o'clock, P. M., speeches will be made on the fair grounds, from the Judge's stand and balcony of Agricultural Hall, by some of the gentlemen named above, with instrumental and vocal music at intervals.

At 7:30 o'clock, evening, speaking will be resumed at the Capitol building, with music as before.

Books containing the music and words complete, also the programmes for the day in detail, can be obtained at the Capitol and on the fair grounds at a trifling cost. It is hoped that visitors will provide themselves with these books and that all will join in singing the words, which will be adapted to patriotic and popular airs.

JAMES E. PITTMAN,

B. VERNOR,

F. A. BAKER,

*Committee of Arrangements by appointment of
the Board of Commissioners.*

COMPLETE LITERARY AND MUSICAL PROGRAMMES FOR THE DAY.

Madame DEBBIE CLEMELLI, of New York (formerly of Detroit), prima donna soprano.

Mrs. MARY E. TILDEN, of Mt. Clemens, contralto.

"Arion Quartette," of Detroit—C. V. SLOCUM, first tenor; L. P. DESALE, second tenor; J. Q. ADAMS, first bass; R. GATES RICE, second bass.

Miss MINNIE ORTON, of Bay City, piano accompanist for the Representative Hall programmes.

Miss HELEN R. CONNER, of Detroit, piano accompanist for the Senate Chamber programmes.

Also the Lansing "Liederkrantz," 20 males voices, under Prof. PH. KEINATH, director.

Mixed chorus of 80 voices from Lansing.

Chorus of 130 children from the Lansing public schools, under the direction of Mrs. FLORA RARICK, special teacher of music.

The 23d U. S. Infantry Band, stationed at Fort Wayne, Detroit, 19 pieces, S. BERNINGER, band-master.

The Cassopolis Military Band, 20 pieces, C. W. MARTIN, leader.

The Knights of Pythias Band of Lansing, 15 pieces, JOSEPH SPROSS, leader.

Mr. L. A. BAKER, Assistant Manager at Lansing.

Prof. H. B. RONEY, East Saginaw, Director of Music for the Semi-Centennial.

CAPITOL STEPS PROGRAMME.

Gov. R. A. ALGER, Presiding.

10:00 A. M.—Music, National Melodies.....Alford.
Cassopolis Military Band.

Music, "Let the Hills and Valleys Resound".....Richards.
Chorus of 130 School Children.

Prayer.....Rev. Geo. Taylor.

Address of Welcome by His Excellency, Russell A. Alger, Governor of Michigan.

Music, "Columbia the Gem of the Ocean."

Chorus of Children.

Address, "Financial".....Hon. E. O. Grosvenor,

11:15—Music, Overture, "Rival".....Pettee.
Cassopolis Military Band.

Address, "Mineral".Prof. Chas. D. Lawton.
Voluntary Addresses.

Music, "My Country, 'Tis of Thee," with special "Michigan" verse,
written by Prof. Roney.

Full chorus, united audiences and three bands.

REPRESENTATIVE HALL PROGRAMME.

Hon. HENRY CHAMBERLAIN, Presiding.

10:15 A. M.—Grand selection from "Trovatore," arranged by Band-master S. Berninger.

23d U. S. Infantry Band.

Music, "Michigan's Semi-Centennial Hymn," written by D. Bethune
Duffield, Esq., of Detroit, to "Kellar's American Hymn."

Chorus.

- Address, "Historical".....Judge Thos. M. Cooley.
 11:15—Music, Ode, "Land of the Lakes." Written by Judge J. Logan
 Chipman, of Detroit. Music composed for this occasion by Prof. H.
 B. Roney. Madame Clemelli, Mrs Tilden, Messrs Slocum, Rice and
 Chorus.
 Address, "Judiciary".....Judge James V. Campbell.
 Music, "Star Spangled Banner," with special "Michigan" verse, by
 Rev. J. T. Oxtoby, of East Saginaw. Madame Clemelli, Chorus, Audi-
 ence and 23d U. S. Infantry Band.
 12:15 until 2 P. M.—Barbecue and Basket Picnic at the Fair Grounds.

SENATE CHAMBER PROGRAMME.

Hon. HENRY FRALICK, Presiding.

- 10:15 A. M.—Music, Pharaphrase, "How Fair Thou Art" (Nesvadba).
 Arranged by J. B. Claus.....Lansing Knights of Pythias Band.
 Music, "The United Band".....Otto.
 Arion Quartette.
 Music, Solo, "The Soldier's Talisman".....Oberthur.
 Mr. C. V. Slocum.
 Address, "Executive".....Ex-Gov. Alpheus Felch.
 11:15—Music, Solo, "Oh, Let Me Like a Soldier Fall," from "Mari-
 tana".....Balfe.
 Mr. L. P. DeSale.
 Address, "Legislative".....Hon. John J. Adam.
 Music, Solo, "Fruehlingszeit," (Springtime).....Becker.
 Mrs. Mary E. Tilden.
 Music, "Michigan, my Michigan," Written by Maj. James W. Long,
 of Grand Rapids, to the air, "Lauriger Horatius."
 Arion Quartette.
 12:15 until 2 P. M.—Barbecue and Basket Picnic at the Fair Grounds.

AGRICULTURAL HALL PROGRAMME.

Hon. S. T. READ, Presiding.

- 2:00 P. M.—Music, Overture, "Silver Bell".....Schlepegrel.
 23d U. S. Infantry Band.
 Address, "Fish and Fish Culture".....J. H. Bissell, Esq.
 3:00—Music, Grand Medley on National Airs.....Catlin.
 23d U. S. Infantry Band.
 Address, Educational, "Agricultural College," President Edwin Willits.
 3:45—Music, "The Tar's Song".....Hatton.
 Arion Quartette.
 Address, "Reformatories and Charities".....L. L. Barbour, Esq.
 4:30—Music, "Roses and Lilies" (Cornet Solo).....Rollinson.
 Cassopolis Military Band.
 Address, "Mechanical".....James W. Bartlett, Esq.
 Music, Overture, "L'Espoir de L'Alsac".....Herman.
 Cassopolis Military Band.

GRAND STAND PROGRAMME.

Hon. T. H. HINCHMAN, Presiding.

- 2:00 P. M.—Music, "American Overture".....Catlin.
 Lansing Knights of Pythias Band.
 Music, "The Hunter's Farewell".....Mendelssohn.
 Arion Quartette.
 Address, "Agriculture".....Hon. Wm. L. Webber,
 3:00—Music, "Michigan, My Michigan".....Arion Quartette.

Address, "Horticulture" Hon. Chas. W. Garfield.
 3:45—Music, Potpourri, "Ye Olden Time" Lansing K. P. Band.
 Address, "Agricultural Possibilities of the Upper Peninsula."
 4:30—Music, "The Vacant Chair" G. F. Root.
 (In Memoriam of Michigan's Heroes) Arion Quartette.
 Address, "Military" Gen. John Robertson.
 Music, "Recollections of the Warfire," Beyer.
 23d U. S. Infantry Band.

REPRESENTATIVE HALL PROGRAMME.

Hon. HENRY CHAMBERLAIN, Presiding.

8:00 P. M.—Music, Overture, "Diademe" Herman.
 23d U. S. Infantry Band.
 Music, "March of the Half Century." Written by Mrs. K. R. Hill, of
 Vassar, to "March to the Men of Harlech."
 Chorus.
 Music, "Beautiful Michigan," words and music by Madame Debbie
 Clemelli Madame Clemelli (Solo), Mrs. Roper, Messrs. C. O. Pratt
 and L. A. Baker.
 Address, "The University" President Jas. B. Angell.
 9:00—Music, Solo, "With Verdure Clad," from the "Creation" .. Haydn.
 Madame Debbie Clemelli.
 Music, Ode, "Land of the Lakes" Chipman—Roney.
 Soloists and Chorus.
 Address, "Congressional."
 Music, "Michigan's Hymn of Peace," written by Edward Bloedon, of
 East Saginaw, to "Battle Hymn," from "Rienzi," R. Wagner.
 Lansing Liederkranz, Prof. Philip Keinath, Director.
 Music, "Hymn of the Fifty Years," written by Mrs. C. C. Moots, of
 West Bay City, to "Glory, Hallelujah!" Mrs. Tilden, Chorus,
 Audience and 23d U. S. Infantry Band.
 Music, Doxology, "Praise God from Whom all Blessings Flow."
 Chorus, Audience and Band.

SENATE CHAMBER PROGRAMME.

Hon. HENRY FRALICK, Presiding.

8:00 P. M.—Music, "Puritan's Daughter" (Balfe) Geo. Wiegand.
 Lansing Knights of Pythias Band.
 Music, Quintette, "Queen of the Valley" Dr. Caldicott.
 Mrs. Tilden and Arion Quartette.
 Music, Solo, "The Warrior Bold" Adams.
 Mr. R. Gates Rice.
 Address, "Railroads," Maj. W. C. Ransom.
 9:00—Music, Solo, "The Lay of an Imprisoned Huntsman," from "Lady
 of the Lake" Schubert.
 Mr. J. Q. Adams.
 Address, Educational, "Normal and Common Schools,"
 Prof. J. M. B. Sill.
 Music, "Away Down Upon the Suwanee River" Arion Quartette
 Music, Doxology, "Praise God from Whom all Blessings Flow,"
 Arion Quartette and Audience.

LANSING CHORUS FOR THE SEMI-CENTENNIAL.

PROF. H. B. RONEY, *Conductor*.

Mr. Fred. Adler.	Mr. J. A. Crossman.	Mr. Wm. Nesshoefer.
Mr. and Mrs. C. Allsdorf.	Mr. J. Dietz.	Dr. H. Ostrander.
Mrs. J. Leslie Ash.	Mrs. R. B. DeViney.	Capt. C. O. Pratt.
Miss Ella C. Baker.	Mr. Ant. Dunnebach.	Mrs. D. Parker.
Miss Maude E. Baker.	Miss Etta Foster.	Mr. E. H. Porter.
Miss Myrtle Baker.	Miss Nellie Foster.	Mrs. L. S. Roper.
Mr. L. Adelbert Baker.	Mr. George Frey.	Mrs. Flora Rarick.
Mr. L. A. Baker.	Mr. David Gauss.	Miss Nettie Robson.
Mr. and Mrs. W. G. Bement.	Mr. Christian Guenther.	Mr. Frank Robson.
Mr. and Mrs. J. A. Burnett.	Mr. H. R. Howard.	Mr. Dwight Robson.
Mr. A. N. Brown.	Mr. L. B. Hontoon.	Miss Flora Rice.
Miss Lizzie Brown.	Miss Hattie Hasty.	Mr. John Strong.
Miss Hettie Brown.	Mr. Aug. Henrich.	Mr. Geo. L. Strong.
Miss Grace Beamer.	Miss E. D. Howe.	Mr. J. Frank Strong.
Miss Maggie Cahill.	Mr. H. A. Irish.	Miss May L. Strong.
Miss Clara Cahill.	Miss Gertie Jamison.	Mr. J. Seibel.
Miss Minnie Carnahan.	Miss Lena Jones.	Miss Kittie Skinner.
Miss Grace Carpenter.	Miss May Kellogg.	Miss Zayde Spencer.
Mr. & Mrs. Frank Chaffee.	Mr. R. B. Kellogg.	Mrs. Homer L. Thayer.
Mr. F. E. Church.	Mr. Horace C. Lapham.	Miss Nora Thorne.
Mr. Geo. C. Cooper.	Mr. and Mrs. J. P. Lee.	Mr. Chas. H. Thompson.
Miss Fannie Cowles.	Mr. Martin Lichte.	Miss Mina Tubbs.
Miss Grace Cowles.	Mr. Joseph Lugar.	Mr. Carl Vogel.
Mrs. Geo. Coleman.	Mr. Henry Mueller.	Mr. G. H. Ziegler.
Mr. Coonsman.	Dr. D. M. Nottingham.	Mr. C. W. Ziegler.

LANSING CHILDREN'S CHORUS FOR THE SEMI-CENTENNIAL.

MRS. FLORA RARICK, *Director*.

Anna Ashley.	Gertie Corbin.	Florence Bissell.
Grace Ayers.	Arthur Cannell.	Etta Kepky.
Alice Braze.	Winford Cannell.	Charlie Spring.
Eddie Bement.	Eddie Dean.	Sophie Hare.
Charlie Beard.	Carrie Gleason.	Ada Ackerman.
Lizzie Bennet.	Mable Gale.	Clara Bailey.
Mabel Beamer.	Jennie Humphrey.	Willie Brake.
Maggie Baker.	John Hertel.	Elva Choate.
Mamie Byers.	Clem Jarvis.	Mina Cook.
Clara Bailey.	Lillie Klocksism.	Flora Crowner.
Frank Baker.	Mina Leadly.	Charlie Daharsh.
Lulu Birch.	Mary Pugh.	Minnie Dunker.
Howard Carnahan.	Maud Roberts.	Oce Ferry.
Irving Carey.	Ralph Ranney.	Louise Ganssly.
Henry Daniels.	Marie Stephenson.	Millie Granger.
Bennie Davis.	Juna Todd.	Alvin Herrick.
Grace Fowler.	Frankie Tyler.	Jerome Howard.
Maud Gordon.	Roswell Wright.	Louie Leshor.
Allie Granger.	Howard Baker.	Myrtie Marsh.
Sophie Zahner.	Howard Bement.	Grace McDonel.
Daisy Davis.	Arthur Donovan.	Marcus Miles.
Irving Haag.	Millie Edwards.	Maude Neff.
Nellie Hasler.	Nellie Gower.	Alice Olds.
Lettie Higley.	Julia Findley.	Schuyler Olds.
Willie Hornberger.	Louie Hill.	Willie Piella.
Nettie Hulbird.	Clara Hahn.	Charlie Reitz.
Robbie Larned.	Tom Humphrey.	Seymour Rice.
Emily Leech.	Katy Keys.	Fanny Roark.
Halle Mead.	John Kelly.	Edith Sellers.
Gertie Millard.	Maggie Miller.	Jay Snyder.
Charlotte McCallum.	Joel Rix.	Dottie Brown.
Belle Nottingham.	Elia Boyce.	Harry Case.
Florence Presley.	Norman Spencer.	Daisy Collett.
Edith Pack.	Lewis Spice.	Alice Dean.
Grace Robson.	Lora Williams.	Willie Dell.
Leonard Roe.	Maggie McKenzie.	Ida Foerster.
Gertie Smith.	Ollie Newbro.	Ralph Garlick.
Frederick Swan.	Byron Otis.	Laura Hahn.
Mary Saxton.	Don Piatt.	Fred Hertel.
Herbie Sutliff.	Nellie Snyder.	Claude Hickey.
Frank Wells.	Ida Spaulding.	Harriett Hull.
Ella Wilcox.	Ruby Spaulding.	Claude Humphrey.
Rena Wilson.	Fred Schuon.	Inez Hutton.
Fannie Walz.	Callie Wardwell.	Willie Hollis.
Edith Cooley.	Eva Ward.	

LIST OF DELEGATES OF THE STATE PIONEER AND HISTORICAL SOCIETY.

*Appointed to represent the Society at the Semi-Centennial.*HON. HENRY FRALICK, *President.*MRS. HARRIET A. TENNEY, *Recording Secretary.*GEORGE H. GREENE, *Corresponding Secretary.*EPHRAIM LONGYEAR, *Treasurer.**Executive Committee.*

Prof. JOHN C. HOLMES.

Judge ALBERT MILLER.

HON. FRANCIS A. DEWEY.

*Committee of Historians.*COL. M. SHOEMAKER, *Chairman.*

Dr. O. C. COMSTOCK.

Hon. TALCOTT E. WING.

M. H. GOODRICH, Esq.

Hon. WITTER J. BAXTER.

Hon. JOHN J. ADAM	Tecumseh.
Dr. I. P. ALGER	Coldwater.
Hon. E. LAKIN BROWN.....	Schoolcraft.
Rev. R. C. CRAWFORD.....	Grand Rapids.
Hon. THOS. M. COOLEY.....	Ann Arbor.
Hon. JAMES V. CAMPBELL	Detroit.
Hon. WM. H. CROSS.....	Centreville.
Hon. JOHN H. FORSTER.....	Williamston.
Hon. ALPHEUS FELCH	Ann Arbor.
Hon. THOMAS D. GILBERT.....	Grand Rapids.
Hon. O. POPPLETON	Birmingham.
Hon. H. H. RILEY.....	Constantine.
Hon. C. D. RANDALL.....	Coldwater.
Hon. S. L. SMITH.....	Lansing.
Hon. C. B. STEBBINS.....	Lansing.
Hon. FRANCIS R. STEBBINS.....	Adrian.
Mrs. E. M. SHELDON STEWART.....	Michigan Centre.
Mr. A. D. P. VAN BUREN.....	Galesburg.
Hon. C. I. WALKER.....	Detroit.
Hon. WM. L. WEBBER.....	Saginaw.
Hon. E. S. WILLIAMS.....	Flint.
Hon. PETER WHITE.....	Marquette.

"LAND OF THE LAKES."

Written by JUDGE J. LOGAN CHIPMAN, of Detroit.

Music composed for the Semi-Centennial, and dedicated to His Excellency,

RUSSELL A. ALGER.

GOVERNOR OF MICHIGAN

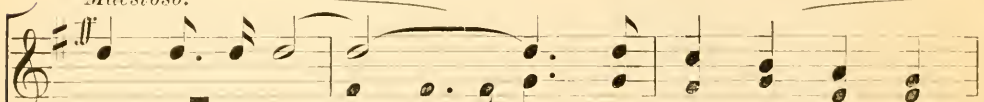
BY

HENRY B. RONEY.

Maestoso ulla Marcia.

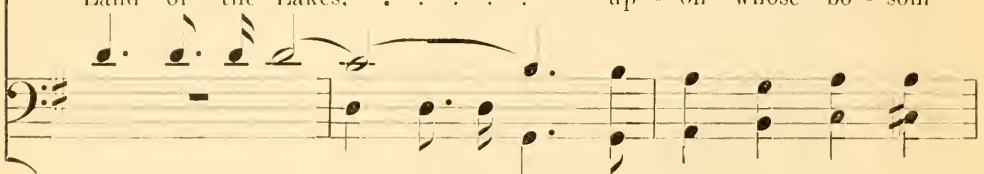


Land of the Lakes, up - on whose bo - som
Maestoso.



CHORUS.

Land of the Lakes, up - on whose bo - som

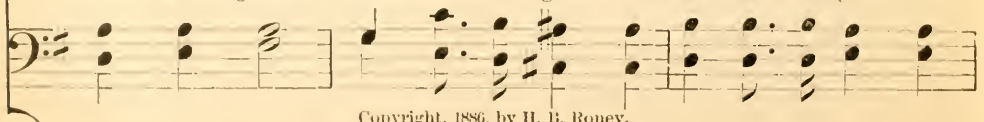


Land of the Lakes.

gleams The va - ried glo - - - - ries
cres.



bo - som gleams, The va - ried glo - ries, the va - ried glo - ries



of each jew - el's sheen. . . . Land of deep wa -

jew - el's sheen,

Land of deep wa - ters lit by flash - ing beams Re-

Land of deep wa - ters

- fleet - ing, na - ture's

- fleet - ing, re - fleet - ing na - ture's, na - ture's

- fleet - - - - - ing,

most lux - u - riant green. Home of bright as - pects of

beau - ty stern or mild, *cres. rit.* 3 . .

beau - ty stern or mild. Of sun - sets, gor - geous in their

rit. Of sylvan shades and fir-clad mountains

dream-y tints, Of syl-van shades and fir - clad

wild, Of bow'rs 'mid which the vo - cal brooklet glints.

mountains wild; Of bow'rs 'mid which the vo - cal brooklet glints.

brooklet glints.

Moderato.

Bass Solo.

Land of the pine, of le - gend and of song, Whose

mf

pp rit.

whispering leaves and waves recount the tale Of peo - ples dead, Of

*pp rit.**tempo.**ff accel.*

peo - ples dead, of peoples fresh and strong: Land of the beetling crag, the

*dim.**rit.**a tempo.*

west winds wail. Of knightly war. of

rit.

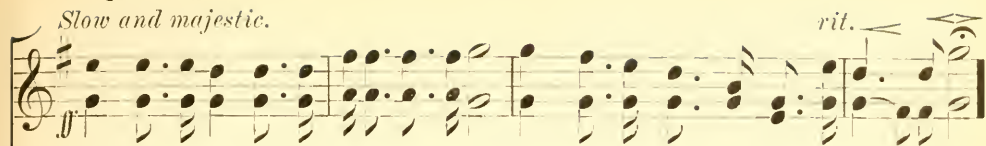
grand old-time ro - mance;

*mf cres.**rit.*

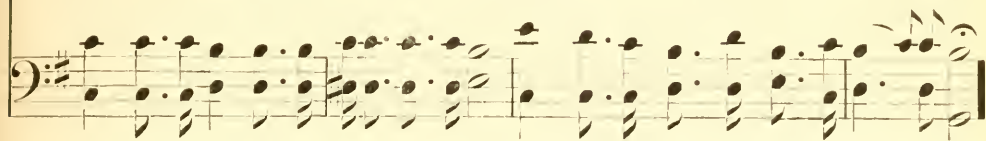
Land which 'erst - while slumbered on her wa - t'ry bed,

'Til Freedom claimed her, waked her from her trance;

f *rit. molto.*

CHORUS.*Slow and majestic.**rit.*

Grand in all aspects be-neficient to man, Land of the lakes, my own fair Mich-igan.

**Soprano Solo.***Andante Grazioso.**p**cres.*

What land more fair than



this land bathed in light?

Mir - ror-ing the sun with



calm, un-daunt - ed eye, Drink - ing the glo - ry

mf

of the star - ry night, In thousand lake - lets,

pp *accel.*

riv - aling the sky. Drink - ing the glo - ry

rit. *f* *Allegretto.*

rit.

of the star-ry night, In thousand lake - lets,

mf Andante espressivo.
Tenor Solo.

ff tr
riv - 'ling the sky, O, land of hope, O land of

rit ff ff rit.

lakes and streams, With hu - mid lips and tresses floating wild,

Seem - ing as some half shy young ma - tron seems, . . . Who

pp smiles and blushes o'er her first born child, *f* Rich in all richness,

cres. rich - er e'en than gold, Dowered in lake and woodland

and in isle, O land of hope, O land of

p

pp

lakes and streams, With lips and tresses floating wild, .

... Seeming as some half shy young

pp Chorus humming.

ma - tron seems, Who smiles and blushes, smiles and

The first system of the musical score is in B-flat major (two flats). The vocal line (treble clef) begins with a half note G4, followed by quarter notes A4, Bb4, and A4 in the first measure. The second measure has a half note G4 and a whole rest. The third measure has a whole rest and a half note G4. The piano accompaniment (grand staff) features a steady eighth-note bass line in the left hand and chords in the right hand.

blush - es o'er her first born child,

The second system continues the melody. The vocal line has a half note G4, quarter notes A4 and Bb4, and a half note G4 in the first measure. The second measure has a half note G4 and a whole rest. The piano accompaniment continues with similar harmonic support.

Rich in all rich - ness, rich - er e'en than gold,

The third system concludes the phrase. The vocal line has a whole rest in the first measure, followed by quarter notes G4, A4, Bb4, and A4 in the second measure. The third measure has a half note G4 and a whole rest. The piano accompaniment provides a final harmonic resolution.

Dowered in lake and wood-land and in isle,

espressivo.

Lov-ing, lov-ing e'en when thy mood is stern and

cold, is stern and cold.

mf

Andantino.

Alto Solo.

p

True to thy faith, too pure to e'er be - guile, Thou

art not like the gaud - y trop - ic clime,

*a tempo.**p rit. - pp*

Which woos the soul with dreamy, sen - sual airs;

*a tempo.**p rit. - pp*

Thy free-will off - 'ring, nob - lest of all time,

*accel. e cres.**ff**f a tempo.**rit.**ff molto.*

Strong minds, brave hearts, with glo - ry crowns thy years.

CHORUS.*Maestoso.*

From thy strong womb some po - et yet will spring, And

mf
in sweet num - bers vo - cal - ize thy soul:.....

And o'er the world thy gra - cious pres - ence fling, As

rit. - *p* - - - *pp* *ppp*
o'er thy land - scapes thy calm wa - ters roll.

*mf Allegretto.***Soprano Obligato. Solo.**

O fai - ry - land, of rose and wood - land

CHORUS.

O land of rose and wood - land

pp

flow'r, A - bode of grace - - ful forms, of swan and

flow'r, of wood-land flow'r, A-bode of grace-ful forms of

dove; Land of wild vines, in many a mys - tie

swan, of swan and dove; Land of wild vines, in many a

rit. - - - - -

bow'r, Dream of an an - gel waft - ed from a -

mys - tic, mys - tic bow'r, Dream of an an - gel waft - ed

cres. - - - - -

3

cres. - - - - - *ff* *rit.* - - - - -

bove..... waft - ed from..... a -

from a - bove, waft - ed from

ff

dim. - - - - - *pp* *p* *pp*

bove..... waft - ed from a -

a - bove.....

bove Time wooed thee forward

p *cres.* *dim.*

1. My country 'tis of thee, Sweet land of lib - er - ty,

This system contains the first three staves of the musical score. The top staff is the vocal line in treble clef, 3/4 time, with a key signature of one sharp (F#). It begins with a melodic phrase and a fermata. The middle staff is the piano accompaniment in treble clef, featuring chords. The bottom staff is the piano accompaniment in bass clef, also featuring chords. Dynamics include piano (*p*), crescendo (*cres.*), and decrescendo (*dim.*).

- to the gaze of man. In pride of thee..

dim. *cres.* *dim.*

Of thee I sing; Land where my Fa - thers died,

This system contains the next three staves. The vocal line continues with a melodic phrase and a fermata. The piano accompaniment continues with chords. Dynamics include decrescendo (*dim.*), crescendo (*cres.*), and decrescendo (*dim.*).

cres. *dim.* *cres.*

My

Land of the pil - grim's pride: From ev - 'ry

This system contains the final three staves. The vocal line continues with a melodic phrase and a fermata. The piano accompaniment continues with chords. Dynamics include crescendo (*cres.*), decrescendo (*dim.*), and crescendo (*cres.*).

rit.
ff

own fair Mich - i - - gan.

rit molto.
ff

moun - tain side, Let free - dom ring.

PRAISE GOD, FROM WHOM ALL BLESSINGS FLOW.

FRANC.

Praise God from whom all blessings flow! Praise Him, all creatures

here be - low; Praise Him a - bove, ye heavenly host!

Praise Fa - ther, Son, and Ho - ly Ghost! A - men.

“ MICHIGAN, MY MICHIGAN.”

Written by Major James W. Long, of Grand Rapids.

AIR—“ Lauriger Horatius,” adapted during the war to
“ Maryland, My Maryland.”

Land of my love, I sing of thee,
Michigan, my Michigan;
With lake-bound shore, I'm proud of thee,
Michigan, my Michigan.
The sweet winds whisper through thy pines,
The jewels glitter in thy mines,
And glory on thy chaplet shines—
Michigan, my Michigan.
I've traveled all thy confines o'er,
Michigan, my Michigan;
From lake to lake, and shore to shore,
Michigan, my Michigan.
I've seen thy maimed, thy halt, thy blind,
I've seen the ones bereft of mind,
To all of them thou art so kind—
Michigan, my Michigan.
Thou art so pure, but modest too,
Michigan, my Michigan;
Thou art so brave and still so true,
Michigan, my Michigan.
No promise unfulfilled;—on trust
Thy noble sons have bit the dust,
Remembered are they. For thou art just—
Michigan, my Michigan.
The axe resounds 'mid woodland trees,
Michigan, my Michigan;
The sails of commerce court thy breeze,
Michigan, my Michigan.
And templed cities rise in sight,
And happy eyes catch heaven's light,
Our God protects thee through the night,
Michigan, my Michigan.
Oh! *Alma Mater*, at thy shrine,
Michigan, my Michigan;
I worship thee as most divine,
Michigan, my Michigan,
“ Tuebor ” “ I'll protect,” 'tis true—
Oh, fair peninsula! and you—
Shine out a gem in starry blue,
Michigan, my Michigan,
Thy diadem—thy hero sons,
Michigan, my Michigan;
Thy choicest love—their helpless ones,
Michigan, my Michigan.
And just as long as song shall ring
From those who bring an offering,
To thee, my love, this song shall sing—
Michigan, my Michigan.

MICHIGAN'S HYMN OF PEACE.

*Written by Edward Blöden, of East Saginaw, to the
music of the "Battle Hymn" from "Rienzi,"
by R. Wagner.*

Rejoice! Rejoice! my valiant men,
Rejoice! Rejoice! my Michigan;
The days of strife have passed away,
Peace reigns supreme this happy day.
Columbia's sire, thou youthful star,
Unfurl thy banners, torn in war.
Your swords my rest, bright stands thy name,
Engrafted deep on Nation's fame.
Rejoice! Rejoice! Peace reigns supreme this day;
Rejoice! Rejoice! the war cloud passed away.
In armor clad we held our country's standard.
'Gainst mighty foe, our banners floating onward.
In mem'ry dear rest unattended graves.
In mem'ry dear enshrined are our braves,
She brav'st of all, eternal slumber holds,
They fell, protecting our banners' folds.
Rejoice! Rejoice! the land is free from danger;
Rejoice! Rejoice! peace reigns in our home.
Forgotten all, the cause, the strife, the anger,
The bells of peace ring up to heaven's dome.
Let chants resound, ye echoes, tell aloud
Thy sons, my Michigan, are of thee proud.
Peace reigns supreme. Columbia's shield is bright.
Gloria, Gloria, in excelsis Deo.
Gloria, Gloria, in excelsis Deo.

"MY COUNTRY! 'TIS OF THEE."

TUNE—"America."

My country! 'tis of thee,
Sweet land of liberty,
Of thee I sing;
Land where my fathers died;
Land of the pilgrim's pride;
From every mountain-side,
Let freedom ring.

My native country! thee,
Land of the noble free,
Thy name I love;
I love thy rocks and rills,
Thy woods and templed hills;
My heart with rapture thrills,
Like that above.

Let music swell the breeze,
And ring through all the trees,
Sweet freedom's song;
Let mortal tongues awake,
Let all that breathe partake,
Let rocks their silence break,
The sound prolong.

[Additional Verse by H. B. Roney.]

O great and glorious State,
Land of the wood and lake,
Thy praise we sing;
Our loyal hearts adore
Thy fertile, wave-washed shore;
God bless thee evermore,
Our Michigan.

BEAUTIFUL MICHIGAN.

Words and Music by Debbie Briscoe Clemelli, New York.

To thee I sing, my own dear home,
In the land of the setting sun;
To thy hills and valleys, rivers, lakes,
Thy beauties every one.
Thou art dear to the hearts of thy loyal sons,
And thy daughters fond and true,
Who greet thee to-day with pride and joy,
And thy glorious past review.

CHORUS.

Then give three cheers for the boundless shores
The broad lake-breezes fan;
Thou art dear to the hearts of thy loyal sons,
Beautiful Michigan.

Each hallowed spot of thy lake-bound shore,
Each teeming city of thine,
Each village, hamlet, hillside, dale,
Thy forests of oak and pine,
Thy Northern shores that are fondly kissed
By Superior's sparkling wave,
Where thou yielddest rich ores from thy loving
heart,
Are dear to thy children brave.

CHORUS: Then give three cheers, etc.

On lakes and rivers winding through
Thy forests, deep and dark,
Where glided swift in days gone by,
The savage warriors' barque,
Are smiling meadows, fertile fields,
Tilled by thy children free,
Who offer, this day, with thankful hearts,
Their loyal homage to thee.

CHORUS: Then give three cheers, etc.

Then blessings on thee, Michigan,
We greet thy banners gay,
And wish thee many glad returns,
Of this, thy natal day.
We'll govern thee in coming years,
By laws both true and just,
And "Progress" shall our watchword be,
In God, our hope and trust.

CHORUS: Then give three cheers, etc.

PRAYER AT THE CAPITOL STEPS.

By REV. GEORGE TAYLOR..

After music by the Cassopolis band, the chorus of 150 school children rendered the beautiful choral, "Let the Hills and Valleys Resound." Then the Rev. George Taylor rendered the following fervent prayer:

Almighty, holy and eternal God, with whom a thousand years are as but one day, we, Thy dependent creatures, devoutly thank Thee for our existence and temporary residence upon this, Thy earthly footstool. We thank Thee for casting our lot in this pleasant, favored, and prosperous land, and gratefully confess that the lines have fallen to us in pleasant places; we have a goodly heritage.

We bring our grateful offerings to Thee that we are thus permitted to convene on an occasion so auspicious; and would acknowledge Thy marvelous goodness in leading our enterprising people from their earlier eastern settlements, by the star of empire westward bound, until it has shed its effulgence so profusely upon these our peninsulas; and that during the space of our short lives we have been permitted to witness the fulfillment of the prophecies of Thy holy word, for to us "The wilderness has become a fruitful field, and to-day the desert rejoices and blossoms as the rose."

We make our prayer to Thee, that as Thou hast in the past blessed, guided and protected their predecessors, that Thou wilt vouchsafe Thy continued favors to Thy servants, the President of these United States, and all in authority throughout the National and State Governments; and especially do we supplicate Thy blessing upon our beloved State; upon the executive now present, the officers of State, and all in authority and under authority throughout the commonwealth. And when the story of the march of enterprise for the last half century shall have been told, and aged and youth shall exchange their congratulations, the devout response of every heart shall be "Not unto us, not unto us, but unto Thy name be the praise." With Thy innumerable favors given, we thank Thee above all for our inestimable civil, intellectual, social, humanitarian and religious institutions; and earnestly pray that with our future progress and increase of wealth and power, that intelligence and virtue may keep equal pace, and that under the benign influence of the gospel of Jesus Christ, Thy Son, our great men may ever be good men, and all the people become great because they are good.

In Thy preserving providence extend Thy fatherly care over us during these festivities, so that all our doings begun, continued and ended in Thy fear may honor Thy holy name. And when the revolving years and centuries of time with us shall cease, bring us, we pray Thee, to a participation with Thyself in Thine own blessed eternity, for the Redeemer's sake. Amen.

ADDRESS OF WELCOME.

RUSSELL A. ALGER.

GOVERNOR OF MICHIGAN.

CITIZENS OF MICHIGAN: With great pleasure I bid you welcome to this your Capitol to-day, and congratulate you upon this epoch in the history of our State.

Fifty years have come and gone! and during those years this great Commonwealth has grown from infancy to its present mighty strength. Then, it was almost a trackless forest. Now, it stands in the front rank of the States of this great Union.

Michigan, with her natural resources, and peopled by such noble women and resolute men, could not be otherwise than great.

Her educational institutions, headed by her University and Agricultural College, are among the foremost of the country; while her other State institutions, with the magnificent Soldiers' Home now being built for a *cap-stone*, will bear favorable comparison with those of any State in the Union. While in agricultural products she is unsurpassed, both as to variety and quality, she produces more iron, copper, lumber and salt than any other State in the Union.

There are brave men and women here in our midst to-day, who have battled with privations and adversity; to whose energy and determination we owe, in a large measure, this great consummation. All honor to them, and may they—the pioneers—long remain among us to share the honors and receive the love and reverence so nobly earned.

At the election in 1835 the total vote cast for Governor was 8,322, while in 1884 it aggregated 400,348.

Her population in 1837, was 174,467; while to-day, it will number fully two millions. These figures are given to enable us, at a glance, to appreciate our wonderful growth.

When, in 1861, armed treason threatened the land, and the

Government called for men to defend its flag, Michigan responded, giving her full quota. It was then she showed her loyalty and patriotism.

According to the census of 1860, our population was 749,113; and Michigan sent to the front 90,747 of her bravest and best men, or nearly one in eight of her total population, according to that census; men, who grandly sustained the reputation of their State, and whose blood stained every battlefield of the war. Of these, the "Roll of Honor" shows that 14,855 were killed in battle, died of wounds or disease—many of them in that "hell of hells," a Southern prison—or nearly one out of every six who enlisted.

Brave men! A grateful State will gladly care for those of your comrades who stood by your side, many of whom helped to lay your lifeless bodies away in far-off graves, there to await the bugle-call to your final reward. Hearts there are here to-day, that ache for loved ones so early lost; and indignation heats the blood and quickens the pulse of those who made these great sacrifices, as they read of the recent triumphant march of the head of the rebellion through the South, uttering the same old treasonable sentiments that carried the fire-brand of war through the South in 1861, and whose pathway was strewn with flowers by the school children, *en masse*, in 1886.

Let any section of the country teach its children to reverence those who took the oath before high heaven to defend their country, and then attempted its overthrow, if they will; but let us teach our children that treason is treason, and that never, in future, will it be tolerated for a day.

This is no appeal to sectional prejudice, but is that which makes the future of this government safe. Unless we teach our children that this country is a heritage; that to attempt to destroy it is wrong, and that to punish those who attempt such destruction is right, we would better teach them nothing.

As we protect with the greatest determination that which we value most, so let us with one voice proclaim, that in this broad land there is no place for the flag of the secessionist, the anarchist, the nihilist, the pagan or the commune, and that all law-abiding men and women have a right to their own, whether it be property or labor, and that the interference with these rights will not be permitted.

Let us teach them to love their country, to labor for its prosperity, and to defend it if in danger, and to bow to only one flag, and that *the* flag, which, amid shot and shell, has been carried victoriously wherever and whenever the Union has been assailed—the grand old stars and stripes.

Let us with one accord, proclaim to the world, that this great land of ours is only open to, and will receive from other countries, none except those who are willing to become law-abiding and loyal citizens, ready at all times to labor for the country's good in time of peace, and to defend her in all times of danger.

THE FINANCIAL HISTORY OF MICHIGAN

FROM EARLIEST TERRITORIAL TIMES TO THE PRESENT.

HON. EBENEZER O. GROSVENOR.

FELLOW CITIZENS: The subject assigned me, "The Financial History of Michigan from earliest Territorial Times to the Present," is too broad and comprehensive for me to expect, or even hope to treat with the fullness and accuracy desirable. Properly given, it would be a history of the material progress, growth, and development of the Territory and State. It is hardly possible at this time for want of authentic data, to give much information as to financial management, during the time Michigan was under the control of the Governor and Judges, in whom was vested the executive and legislative authority of the Territory.

We can get only glimpses of these matters, from laws passed from time to time, and as all general salaries and expenses were paid from appropriations made by the General Government, the distribution of funds made under acts passed by the Governor and Judges can at best give but a very partial and imperfect history of the management of the finances of the Territory.

We have been at considerable pains to examine territorial laws and documents from the earliest records available, and give, as "Territorial History," such facts and figures so collected as we deem pertinent to the subject, up to the time when Michigan assumed to act as a State under a Constitution previously adopted. All subsequent to that time we have treated as State history, though as a matter of fact, while the Legislature met November, 1835, and passed laws, since held by our Supreme Court as valid as those enacted by subsequent Legislatures, the State was not formally received into the Union until January 26, 1837.

The act of admission was, however, made to relate back, so as to give the State the benefit of an act of Congress passed June 23,

1836, authorizing the loaning to the several States the surplus revenue in proportion to population.

So far as I can learn from records and laws, the only sources of revenue aside from government appropriations applicable to general territorial purposes, were specific taxes imposed on certain trades, occupations, etc.

We give the substance of two laws as samples :

By act of the Governor and Judges, September 10, 1805, taxes were imposed as follows :

On carriages, phaetons, etc., per wheel, \$1 ; on sleighs and winter conveyances, each \$2 ; on a stallion 3 years old or over, \$4 ; on each other horse or mare, 3 years old or over, \$1 ; on each other horse or mare colt, mule, etc., 30 cents ; on one dog for a family, 50 cents ; on a second dog, for a family, \$1 ; on each dog over two in a family, \$1.50.

By act of October 7, 1814 :

On each merchant or trader in Detroit, \$25 ; on each merchant or trader, elsewhere in the Territory, \$10 ; on each tavern keeper and retailer of distilled spirits, keeping also a billiard table, \$28 ; on each tavern keeper of same kind not keeping a billiard table in Detroit, \$10 ; on each such tavern keeper elsewhere in the Territory, \$5 ; on each auctioneer in Detroit, \$12 ; on each auctioneer elsewhere in the Territory, \$6 ; on each occupier of a ferry in Detroit, \$8 ; on each occupier of a ferry elsewhere in the Territory, \$3.

These laws were modified and changed from time to time, as to amounts and new trades and articles added ; but the system of taxation remained substantially the same until Michigan became a State. Through the entire territorial period, appropriations were often made in anticipation of funds to be received, and interest-bearing certificates were issued for the same, which, to some extent, entered into the circulation as money. Very early in the history of the Territory, an officer was named at a nominal salary, as treasurer ; but his powers and duties were not well defined or onerous, as all financial affairs seem to have been under the management and control of a "Financial Agent," who received and disbursed moneys, issued scrip, etc., a system which appears to have been continued in the earlier period of our State.

The Governor and Judges were restricted in the enactment of laws to the selection of laws from other States, only so modifying

them as to make them applicable to the circumstances and condition of the Territory, and the source from which they were derived was always given in the acts. These laws were generally approved by Congress, the only single exception we have found, being an act to incorporate a bank, referred to especially under the head of Banks. In examining these early records and laws, we are forced to admire the care, prudence and economy manifested. The labor imposed upon the Governor and Judges in proportion to the amounts involved in making appropriations, was very great—a special statute being requisite to authorize the payment of any bill or claim against the Territory—"the name of the payee, the amount of the bill, the article purchased and object for which the debt was contracted," being all particularly specified in the act with as much minuteness of detail as a merchant would observe in making an original entry. The sums thus appropriated ranged from a few cents to thousands of dollars, the exact amounts being given to quarters of a cent.

The labor of so collating appropriation bills as to give exact amounts applied to different purposes, as salaries, court expenses, legislation, territorial roads and bridges, public buildings, education, etc., would not be compensated by the value attaching to such information, and were such information desirable, it is not now attainable, as so many sources of uncertainty are found in the fact that in anticipation of the receipts into the treasury, certificates were given, and in other cases amounts allowed to run, so that the same act often covered matters pertaining to several different years. The entire destruction of Detroit in 1805, led to a replatting of the village and an effort at adjusting claims of owners of land under the old plats by assignments of lots in the new; all differences in value being adjusted by payments to or from the fund denominated the Detroit Fund. In appropriation bills, while in general the *fund* from which the sums are to be paid is stated, there are many exceptions, and hence we have not deemed it important to attempt any classifications except from 1832 to 1835 inclusive.

Not so much for the value of the statistics, as a matter of curiosity, we have examined all acts of appropriation during territorial existence, and found that from 1806 to and including 1835, one hundred and one acts were passed, appropriating in the aggregate, \$137,668.35 $\frac{3}{4}$. The appropriation of 1835 was \$25,327.05,

and included expenses of several "sessions of the Legislative Council, taking the census, sustaining the supremacy of the laws and maintaining the integrity of the Territory against the encroachments of Ohio."

We give an imperfect classification of the appropriations from 1832 to 1835 ·

General Territorial expenses	\$ 2,561.72
Salaries of Legislative employees.....	11,774.50
Printing Legislative proceedings, laws, etc	10,979.03
Fuel, stationery, etc., for Legislative Council.....	3,857.64
Salaries other than Legislative employees.....	4,649.61
Legislative Library.....	1,244.00
To preserve the integrity of the Territory.....	6,000.00
Roads and bridges.....	3,700.00
Railroad surveys.....	1,030.05
General court expenses	2,038.45½
Taking census	1,898.08
Aggregating.....	<u>\$49,832.88½</u>

This classification is no doubt quite defective, but as accurate as we can make it from information at our command. Nor does it contain entire appropriations made, as some printing was to be done at specified rates, and laws to be published by newspapers, and a small sum paid each on proper evidence of publication, and other matters of like character.

BANKS AND BANKING.

The earliest legislation on the subject of banking appears to have been an act passed by the Governor and Judges, September 19th, 1806, incorporating the Bank of Detroit for the period of one hundred and one years, with a capital of \$1,000,000, the Governor and Judges being authorized to subscribe for the Territory an unlimited amount of stock. Its bills were made receivable for all dues of the Territory. Some stock was subscribed by the Governor and Judges under authority given them, and seventy dollars appropriated in 1806 to pay assessments on the same, but how many shares were taken we have been unable to ascertain. Whether the bank was ever opened for business, or issued any bills, is uncertain, as the act incorporating the same was disapproved by Congress March 3, 1807. The next bank incorporated was the Bank of Michigan, December 19th, 1817, with a capital of \$100,000, with authority to increase it to \$500,000, the right to subscribe stock on behalf of the Territory being reserved, and

the circulation limited to three times the amount of capital paid in. The cashier of this bank, under several acts of the Legislative Council, was made the Fiscal Agent of the Territory (and for the State for a short time after its admission), and moneys appropriated by Congress for the Territory were deposited with and paid from this bank. Ten years later another bank was incorporated, and up to 1835, when the State Constitution went into effect, ten banks (exclusive of the Bank of Detroit) had been incorporated, with an aggregate capital of \$1,100,000, which under their charters might be increased to \$5,000,000. This number was increased by the Legislature of 1836 and 1837 to seventeen, all with very liberal charters. Several railroad companies were, by their charters, granted banking privileges, their circulation to be secured by pledge of railroad stocks. An effort was made by legislation in 1836 to secure the holders of the bills of banks then and subsequently to be incorporated, by providing for a "Safety Fund," to be raised by a small tax on the paid-up capital of the banks. The project was not productive of very beneficial results, as but a small amount was ever paid in, though it appears in the reports to the Legislatures as one of the funds in the treasury. In the later years of the Territory and earlier of the State, bank currency was very abundant, but the circulation of such bank bills at their nominal value was very limited; this was especially true of the bills of most of the banks outside of Detroit.

In 1833 an act was passed giving banks sixty days within which to redeem their bills after presentation at their counters without forfeiture of charter, and in June, 1837, entire suspension of specie payments was legalized. This was during a period of great financial disturbance and depression throughout the country; and the condition of the banks and the currency in this State did not materially differ from that of nearly every State in the Union. The feeling in favor of extending the privilege of banking to all who desired to engage in it was very strong in the early period of our State history, and the Legislature of 1837 embodied these sentiments in favor of free banking in an act entitled, "An Act to organize and regulate Banking Associations." Under this act any person or persons could, by complying with certain simple prescribed forms, establish a bank of issue; the only requirement rendering it necessary that more

than one person should be interested as a stockholder, was found in the clause providing for a board of directors of not less than five. Each bank was required to have a capital stock of not less than fifty thousand nor more than three hundred thousand dollars. When thirty per cent of the capital stock was paid, in legal money of the United States, and the circulation secured by bonds, notes, mortgages or other securities satisfactory to the clerk and sheriff of the county in which the bank was located, the bank was ready for business. By the provisions of this act ten per cent. additional of the capital stock was required to be paid in every six months until the whole was paid; and the banks were to be examined once every three months by a bank commissioner.

This was during the legalized suspension of specie payments, and the banks thus organized put large amounts of their bills into circulation with no probability of immediate call for redemption. This law was amended at the adjourned session the same year, by restricting the securities to mortgages upon real estate to the amount of the circulation authorized to be approved by the clerk, treasurer, sheriff and associate judge (or a majority of them) of the county where the bank was established, and the time within which stock in addition to the thirty per cent. required before the bank was opened should be paid, was extended so as to require payment of but ten per cent. per year. While the addition of an associate judge of the county to the board by whom the securities must be approved, seemed an increased guaranty of good judgment and proper caution in the examination of securities offered; yet when we reflect that county associate judges of those days were judges mainly by title and courtesy, our confidence in the financial character and sound discretion of the board is not greatly increased, and we can readily imagine the board so constituted (or a majority of them) were easily induced to certify to securities on lands at high and fictitious valuation in anticipation of increased value from the rapid development and settlement, stimulated by increased business facilities to be inaugurated by the banks, and to accept as legal money of the United States, for the thirty per cent. to be paid on the stock at organization, the currency of the banks existing under the same law they were then applying.

Some additional security was attempted by increasing the bank commissioners to three, who were constantly employed in going the rounds of the banks; but their visits were generally antici-

pated, and systematic preparations made to deceive them as to the value of securities and by the exhibition of specie borrowed for the occasion to reappear at the next bank examined. Under this general law the State was flooded with bank currency having practically little or no security for its redemption.

This condition of things could not long continue, and soon resulted in general prostration. The failure of banks was of daily occurrence, and many of them soon in the hands of receivers, and efforts on their part to realize on the securities brought the matter into the courts, and at the January term of the Supreme Court in 1844, the law under which these banks were organized was declared unconstitutional, all securities rendered worthless, and what was known as "Wild Cat" bank bills were sought for only as curiosities.

In 1839 The State Bank of Michigan was incorporated with a capital stock of \$2,000,000, one-half to be owned by the State with seven (increased at the same session to nine) branches, with directors elected by a joint session of the two Houses of the Legislature. This bank and its branches were to be depositories of the public funds, and the faith of the State was pledged for the redemption of the bills. The branches were located at Detroit, Monroe, Adrian, Ann Arbor, Niles, Jackson, Pontiac, Mt. Clemens and Marshall. Certain State officers denominated Fund Commissioners were authorized to negotiate a loan of \$1,800,000 for the purpose of carrying out the provisions of the act. This loan was never negotiated and the only organization under the law was the branch at Detroit. This act was repealed in 1842, and the State probably saved a disastrous experience in banking, as was had in internal improvements. At the same session (1842) the Legislature repealed the charters of sixty-six banks, all of which had forfeited their charters.

Between 1836 and 1842, during the suspension of specie payments, there being little or no coin in circulation, a system in the nature of banking (though unauthorized by law), prevailed throughout the State. Many business men and municipal corporations issued small notes or bills, often engraved so as to resemble bank bills, varying in amount from five cents to larger sums, being promises to pay the amounts specified on their face, and the same was almost universally received and paid out as money. In most cases they were ultimately redeemed, though at the time

when in circulation subject to large discount, except in the immediate vicinity where issued. Business men of the present day, with a currency of uniform value throughout the country, at all times equal to, and readily convertible into coin, can hardly appreciate the condition of the currency and the consequent effect upon business during this period, when every person was compelled to keep at hand and carefully consult (when receiving bank bills), the latest bank note detector, and to examine each separate note to ascertain as to the standing of the bank, rate of discount on its notes, etc., as well as to detect counterfeits which, by reason of the multiplicity of banks, each with bills of different designs and appearance, was a matter of no little annoyance and difficulty; when exchange on New York and the East was high, and change could not be made without the use of shin plasters (as they were called), when the currency consisted of an indiscriminate collection of bank bills, unauthorized shin plasters, State scrip and warrants, town and county orders, all at more or less discount, and liable to rapid depreciation or entire loss. Since the issue of treasury notes (commonly known as "Greenbacks") by the General Government, and the establishment of National banks, bills of State banks have gradually disappeared, and at the present time there is not a bank organized under the laws of this State, that issues bills. A Michigan bank note is rarely or never seen.

INTERNAL IMPROVEMENTS.

While a Territory, and for some years after admission as a State, charters granting corporate privileges for improvements of various kinds were granted by legislative authority with great liberality, without proper guards and limitations, and but for the financial crisis which for a time prostrated all business and resulted in the forfeiting of most of the charters granted, the State to-day might be materially hampered and its resources largely diminished by such charters and grants. Some important works of internal improvements were contemplated and surveys made by territorial authority, and these were enlarged, extended and prosecuted with increased vigor under the State control and supervision. The State Government was inaugurated just before one of the most extensive and disastrous revulsions in financial affairs that has ever occurred in this country. Values of all kinds were unsettled, real and personal property were unavailable in

payment of debts, the currency in circulation was not convertible into coin for even the payment of taxes. A condition of things more severely felt and more generally disastrous in a new State where estates consisted principally of unimproved and unremunerative lands. With no premonition of the impending financial crisis, the young State, under the impetus of speculative schemes and in anticipation of early development and rapid growth, entered at once upon a system of internal improvements embracing every section of the State, and for the purpose of carrying them into effect, authorized loans to a large amount, and in addition to direct State *loans*, pledged the credit of the State in aid of various corporations. Among the contemplated improvements were three railroads across the State, several river improvements and canals, and a large amount of money received from loans, the sale of lands granted to the State for various purposes, the portion of the surplus funds of the United States awarded to this State, and from other sources was expended; and, in addition, a debt incurred evidenced by internal improvement warrants, or standing in unadjusted claims. These State works involved the appointment of many officials drawing salaries and expenses, while most of the works undertaken proved entirely unremunerative, and aside from the development and settlement of the State thus stimulated, almost an entire loss. Two of the railroads, the Michigan Central and the Michigan Southern, were subsequently sold to corporations (chartered for their purchase) at prices greatly below their cost, and paid for principally in evidences of State indebtedness, and the State terminated its connection with internal improvements much poorer, if not wiser, from the experience. Under the charters granted to the corporations purchasing these roads, a large amount has been paid into the treasury as specific taxes, and applied first, to the Sinking Fund (until the debt for which these and other specific taxes were pledged was practically paid), and then, under constitutional provision, to the Primary School Interest Fund. The sale of these roads was authorized in 1847; the amount realized for them was \$2,500,000; for the Michigan Central \$2,000,000, and for the Michigan Southern \$500,000, and evidences of State indebtedness to that amount surrendered and cancelled.

TERRITORIAL AND STATE LOANS.

The only special "Loan" made by territorial authority, so far as we can learn, was authorized at the special session in August, 1835, by which the Governor was empowered to borrow on the credit of the Territory not to exceed \$310,000, and to issue scrip therefor. An act passed on the same day placed \$5,000 at the disposal of the Governor to sustain the supremacy of the laws in the Territory in dispute with Ohio. This loan was evidently authorized in part to provide funds to meet this appropriation. As early as 1809 and during the territorial period, the system prevailed of issuing interest-bearing certificates to public creditors payable when in funds, and these to some extent circulated as money.

The first State loan was by act approved November 14, 1835, passed by the first Legislature of the State convened in special session, authorizing a loan of \$100,000 for State expenses, and the issuing of certificates therefor.

The next loan, known as the "Five Million Loan," deserves special notice, because of the purposes, the circumstances attending its negotiation, the changes made in the original contract, and the very great loss it entailed upon the State. For the purpose of raising funds to carry out the general scheme of internal improvements heretofore referred to, the Legislature, by act approved March 21, 1837, authorized the Governor to negotiate a loan of \$5,000,000; the interest was limited to $5\frac{1}{2}$ per cent., but by an amendment at a special session held the same year, it was increased to six per cent. The Governor, with such advisers as he called to his assistance, undertook the responsible task of negotiating this loan. Two contracts were entered into with weak or irresponsible parties from whom small sums of money were received; but failing to fulfill their engagements, were in turn cancelled. A third contract was entered into with "The Morris Canal and Banking Company" for the sale of the entire issue at the rate of $97\frac{1}{2}$ cents. Subsequently the Bank of the United States became a party to the contract, and gave a guaranty for the payment of about \$3,000,000. This agreement contained the proper and ordinary provisions and safeguards observed in such negotiations, but subsequently the Governor, on behalf of the State, consented to modify and change the terms, and to surrender

the bonds upon part payment, and to rely upon the responsibility of the contracting parties for the fulfillment of the agreement. The loss to the State resulting from these changes in interest and commissions alone, according to a report of a special committee of the Legislature, made in 1840, was \$55,508.13. From a report made to the Legislature in 1847, it appears that there was received by the State on this loan as follows:

On full paid bonds.....	\$1,387,000.00
On part paid bonds.....	1,232,452.72
Making entire amount received.....	\$2,619,452.72

From the fact that the bonds had been surrendered by the State and in part negotiated in good faith, and part hypothecated by the parties who received them from the Governor, the State encountered serious difficulty in effecting any satisfactory adjustment of the bonds hypothecated, and for a few years Michigan was regarded by some of the financial world as repudiating a portion of her just debt. Every effort was made to ascertain the owners and holders of the bonds *bona fide*, and without regard to the amount received upon the same by the State, provision was made for payment to the holders of the entire amount advanced by them, both principal and interest. This action on the part of the young State struggling under a load of debt thus created, most of the funds realized, together with other resources, having been invested in internal improvements which in no case returned an income sufficient to pay interest on their cost, and in most cases bringing nothing into the treasury, was worthy of the highest commendation and a guaranty of its future financial credit and honor.

By the report of a special committee of the Legislature of 1840, before referred to, it was shown that the net amount accruing to the State from the \$5,000,000-loan, if paid according to the contract, after deducting commissions, expenses and interest chargeable upon the same, would be but \$4,032,566.82, the large balance of \$967,433.18 being absorbed in commissions, etc. Depending upon the receipts from this loan, the State pledged its credit to the amount of \$100,000, each to two railroad companies, the Detroit and Pontiac and the Tecumseh and Ypsilanti, guaranteeing their stock, which resulted in almost entire loss. The State also loaned \$20,000 to the Jackson and Palmyra Railroad Com-

pany, and eventually took its franchises in payment and incorporated it into the Michigan Southern. The credit of the State was further loaned to the amount of \$100,000 to the Allegan and Marshall Railroad Company, whose road was never constructed, and the amount advanced on the loan entirely lost. A statement of the loans made by the State, the purpose, rate of interest and amount of each is here given:

In 1835. For expenses of government "scrip issued".....	\$ 100,000.00, 6 per cent.
" 1837. Internal improvement loans.....	5,000,000.00, 6 "
" 1837. Palmyra & Jackson R. R. Co., Stock guaranteed.....	20,000.00, 6 "
" 1838. Allegan & Marshall R. R. Co., Stock guaranteed.....	100,090.00, 6 "
" 1838. Detroit & Pontiac R. R. Co., Stock guaranteed.....	100,000.00, 6 "
" 1838. Ypsilanti & Tecumseh R. R. Co., Stock guaranteed.....	100,000.00, 6 "
" 1838. Penitentiary bonds.....	20,000.00, 6 "
" 1839. ".....	40,000.00, 6 "
" 1843. State University bonds.....	100,000.00, 6 "
" 1843. Interest on \$5,000,000 loan-bonds....	363,324.00, 6 "
1842 to 1845. Adjustment of 5,000,000-loan bonds	1,909,452.02, 6 "
1846 to 1853. In payment of internal improvement warrants.....	265,540.00, 6 "
1839 to 1842. Delinquent tax bonds.....	227,420.67, 6 "
1858. Renewal Penitentiary, University and Detroit & Pontiac R. R. bonds.....	206,000.00, 6 "
1858. To meet deficiency in revenue.....	50,000.00, 6 "
1861. Renewal of \$5,000,000-loan bonds.....	2,000,000.00, 6 "
1859. Repairs and improvement St. Marie's Canal	100,000.00, 6 "
1861. Equipment and payment of troops bonds	1,249,400.00, 7 "
1864 to 1865. Bounties to volunteers bonds.....	1,306,000.00, 7 "

The amounts given are the sums for which bonds were issued, the laws authorizing the loans in some cases giving power to issue larger amounts. These loans have all been paid or payment provided for; the only outstanding bonds of the State are as follows: \$21,000 part paid \$5,000,000-loan bonds, adjustable at \$12,149.97, payable on presentation (probably lost and destroyed). On delinquent tax bonds (never presented) \$70.00 bounty loan bonds, due May 1, 1890, \$221,000.00, making the entire bonded indebtedness \$243,219.97, for the payment of which full provision has been made and the funds set apart.

TRUST FUNDS.

By a provision in the first Constitution adopted by the State, and still in force, the proceeds of all lands then and since granted

to or by the State for educational purposes, were dedicated as a perpetual fund, and the interest annually appropriated to carry out the purposes of the grants. These lands have mainly been sold under legislative enactments as to price, terms of payment, rate of interest, etc. A very large amount has been paid into the treasury from these sources and used for general expenses, the amounts received being placed to the credit of the proper fund, and the interest on such amount, together with all interest received by the State on contracts for lands sold, have been annually applied to the specified educational institution or purpose. The amount held by the State in trust for educational purposes, on September 30, 1884, according to the report of the Auditor General for that year, was \$4,389,524.52, to the credit of the various funds, as follows:

Primary School Fund, 7 per cent.....	\$3,184,190 09
Primary School Fund, 5 per cent.....	361,382 57
University Fund, 7 per cent.....	497,378 78
Agricultural College Fund.....	284,788 27
Normal School Fund.....	61,784 81

Aggregating.....	\$4,389,524 52
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The Primary School Fund has been largely increased since the practical payment of the State debt, by receipts of certain specific taxes from railroads and other corporations as required by the Constitution. The interest on these "trust funds" is a perpetual charge on the State. During the times we are reviewing, large sums of money have been expended for the erection, equipping and support of State institutions, such as prisons, reformatories, asylums, State University, Normal School, State Capitol, etc. Taught by early experience the disastrous results of relying too much upon credit and too little upon present ability and resources, the State has adopted the rule, safe for States as for individuals, of incurring no indebtedness without provision for present payment, making no appropriation without at some time levying a tax sufficient to meet the same.

This has been found safe, wise and economical, and seldom, since the adoption of this policy, has any complaint been heard of burthensome taxation. A statement of the amounts thus raised and expended for a few of the many objects receiving State appropriations, will give some idea of what has been accomplished without inconvenience or reasonable complaint. This statement is taken from reports made to the Legislature in 1885:

Michigan University.....	\$ 1,146,871 60
Normal School.....	501,442 09
Agricultural College.....	687,937 15
State Public School.....	598,116 00
Institutions for Deaf, Dumb and Blind.....	1,601,576 80
Asylums for Insane.....	3,315,996 82
Primary Schools.....	9,789,671 27
Prisons and Reformatories.....	3,083,168 61
Erection and Equipping State Capitol.....	1,559,256 51

Aggregating for nine permanent objects.....\$22,284,072 85

Or nearly a half million dollars a year for the entire period of our State existence.

We have spoken only of State expenditures, and but partially and imperfectly, leaving entirely unnoticed the immeasurably larger sums raised and expended by the people in support of schools, colleges, municipal corporations and other public matters. This financial statement would be incomplete without some reference to the rate of State taxation at the different periods of our history.

For the purpose of comparison, we give in tabular form, from as early a date as practicable, equalized valuation of entire taxable property, rate per cent., and per capita of State tax, and grouped the same into periods of about five years, and give the average at each period, from 1840 to and including 1885. For these computations as a whole, we are indebted to the Auditor General's report of 1885:

YEARS.	Total Equalized Valuation.	Rate per cent. Mills on Dollar.	Per Capita of State Tax.
1840 to 1844.....	\$ 31,572,806 58	.22 mills.	0.30
1845 to 1850.....	29,093,483 23	.3214 "	0.25
1851 to 1855.....	84,609,992 68	.15672 "	0.06
1856 to 1860.....	137,663,009 00	.08606 "	0.02
1861 to 1865.....	172,055,808 89	.29054 "	0.57
1866 to 1870.....	307,965,842 92	.1973 "	0.33
1870 to 1875.....	630,000,000 00	.12676 "	0.68
1876 to 1880.....	630,000,000 00	.152 "	0.49
1881 to 1885.....	810,000,000 00	.15286 "	not given.

Taking the entire period from 1840 to 1885 inclusive, the average State tax has been but about two mills on the dollar, and 30 cents per capita. And it is probable that could we give accurately the figures for the entire half century this day completed, the rate would not vary materially from what has been given.

The entire financial history of this State, notwithstanding early errors and failures, is such that every citizen may be justly proud of the record.

To-day but fifty years a State, and yet we are permitted to contemplate, *freedom from debt*, vast resources already developed, a population numerous and equal to any in energy, integrity, enterprise, culture and refinement, public buildings and improvements, numerous, substantial and costly; and, in many respects, adequate to the probable needs for many years to come. A great University, Agricultural College, and Normal School, each ranking among the first of its kind in the Union, ample State institutions, educational, benevolent, penal and reformatory; a history of fifty years administration in all political and public offices so far removed from the suspicion of corruption or abuse, that the voice of accusation is rarely or never raised; a reputation for financial honor and integrity unstained; credit and thrift unsurpassed. In all this we may rejoice and contemplate with pride. Michigan to-day, though comparatively young, in all respects stands among the foremost of the States.

So much for the past and present! What of the future? We may not, except in imagination, peer into the future. Yet in all history of peoples or States the present and the past have in them much of prophecy or of promise. When, fifty years hence, the citizens of this great Commonwealth gather to celebrate the Centennial of admission to the Union, though imagination *even* may fail to grasp the greatness of the occasion, and the progress that will have been made in wealth, population, education, and general advancement; of this we may rest assured, that foundations in all these departments have been laid deep and broad upon which immense superstructures may safely rest, and we may at least flatter ourselves with the prospect, and rejoice in the hope, that our posterity and successors will have proved themselves worthy of the great inheritance.

MINES AND MINERAL INTERESTS OF MICHIGAN.

PROFESSOR CHAS. D. LAWTON.

COMMISSIONER OF MINERAL STATISTICS.

(Prior to the admission of Michigan as one of the States of the Union, and even subsequently, the Territory was held in poor repute by the people of the east. This unfortunate estimate regarding the value of the country was largely due to the damaging reports which were made by the government surveyors, who early undertook the work of surveying the lands. No portion of the United States was ever more severely or unjustly condemned; but the clouds of censure which had settled over its horizon and through the mist of which its glories had been so long distortedly, or but dimly, viewed, have been dissipated by the dawn of rising prosperity, and slowly the State has emerged from the murky surroundings of former prejudice into the broad sunlight of appreciation and confidence.) The manifold advantages of Michigan are now everywhere recognized. Comparisons that are at times odious, have eliminated misconception and error, indisputable facts derived from statistics have quelled opposition and have placed Michigan in the vanguard of States.

The great bodies of navigable waters which form its borders, affording to it unsurpassed commercial advantages and tempering its climate; its ample rainfall and comparative freedom from destructive droughts; the fertility of its soil; the variety of its products; the value of its timber; the wonderful richness and extent of its minerals; the intelligence, industry and law-abiding spirit of its people; the freedom of its laws; the wise administration of its public affairs, are rapidly exciting the attention of the civilized world and rendering the State in its estimation, one of the most important in the Union.

Michigan is a region of agriculture *par excellence*; of fertile soil, and genial clime, of oaken glades, of stately forests and blooming prairie, of smiling fields and pleasant homes, of thriving towns

and active industry, of prosperity, health, intelligence, economy and obedience to law ; and withal Michigan is a great mining State.

Its deposits of iron, of copper, of salt, of gypsum and of other important minerals are unsurpassed, and the annual output from these sources is unequalled by that of any other State.

The salt deposits, the residuum of ancient shallow seas, possessing unequalled extent and purity, are found in both the east and the west margins of the State, in corresponding magnitude, and probably stretch beneath the surface of the interior.

Extensive beds of the most excellent gypsum, readily accessible for mining and for distribution, are also found centrally located in the agricultural districts.

Durable stone, suitable for foundations, exist everywhere in abundance in the drift formation, and ledges of sandstone, limestone, etc., suitable for building purposes, exist in many localities, and in unlimited quantity. Clays, for the manufacture of brick, tile, sewerpipe and pottery are found in endless supply.

Nor is coal altogether wanting. While the deposits of this mineral with us are not comparable with many other States, they are still of sufficient magnitude to possess some value and to constitute a possible resource that at a future day may avail for important use.

The lower peninsula of Michigan, in which the salt, gypsum and coal are exclusively found, has neither mountains nor ledges of primitive rocks. Its topography is greatly diversified ; the conformation of the surface, though generally rolling, nowhere attains a considerable elevation. The underlying rocks are horizontally bedded, and deeply buried beneath the drift formation in which rocks of every variety are found, but seldom *in situ*. They belong to the drift of which they are part, and are largely derived from the extreme north, from the shores of Lake Superior. Pebbles, boulders, masses of quartzite and of granite, of sandstone, diorite, trap and jasper, greenstone and schist, which make up the rock formations of the Upper Peninsula, are everywhere found, scattered over the surface, and mingled with the soil of Southern Michigan.

But the rocks which form the basis of this superstructure of drift are horizontally bedded beneath the overlying burden ; the upper portions of the series outcrop in various localities in the central and most elevated portions of the peninsula.

The rock formations of Lower Michigan, as determined by examination of exposures which have been either naturally or artificially denuded, are found to consist of the limestone, shales, sandstones and sulphates of the Silurian, Devonian and Carboniferous periods of geologic history. In the outcropping ledges of limestone and sandstone, in many places, rock suitable for building stone and for lime is obtained. Nearly all the rocks of the lower peninsula, however, are wanting in firmness of texture. The shales and sandstones are sometimes fine-grained, but soft and friable, liable to disintegrate under the dissolving action of the elements. Undoubtedly during later Silurian time and subsequently, Southern Michigan constituted a salt-water marsh, or shallow sea bottom, and the evaporation from the surface of which during a geological time, resulted in the deposition of these saline deposits which we are so fortunate as to possess. The region during this time underwent changes of level, being alternately elevated and depressed at long intervals, above or below the level of the sea. Beds of shale, martite and gypsum occur with the salt, and these are succeeded by the arenaceous argillaceous carboniferous rocks of the coal period. They are the *detritus* of pre-existing rocks which, under the action of the waves, the rains, the winds and the frosts, were worn to fineness, to be borne by the waters and deposited in the bottom of the sea. The coal field is estimated to cover an area of about one-fifth of the central part of the peninsula. The limited seams of coal are interstratified with beds of shale, of coarse sandstone and of clay.

Coal, generally a thin seam of it, has been found in many localities, but only in a few places has it been mined. It varies in thickness of from a few inches to four feet. Having but few exposures, actual boring has to be resorted to in order to determine whatever of mineral value may lie beneath the surface in any locality. This operation, requiring labor and expense, is seldom resorted to except for a specific object. No formations later than the coal are found; if they exist they were subsequently swept away in the drift period.

It is probable that the greater portion of the coal originally deposited in this State during the epoch of the coal formation, was worn away and destroyed by the moving glaciers. The soft, yielding rock deposits of Lower Michigan were eroded and swept away by the great rivers of ice that moved over them from the

north and thence were hidden and buried beneath the great accumulation of drift and *debris*. No upheavals or cataclysmal changes have occurred. The rocks remain still in the horizontal position in which they were originally laid down; the valleys and chasms that doubtless, if the rocks were denuded, would be seen to exist, were filled with the drift; the ledges and precipices that abound in the north are, in the lower peninsula, entirely unknown.

In all localities where shafts have been opened, but a single workable seam of coal has been found, so that from present knowledge it may be stated that the stores of this mineral left by nature within our borders for future consumption, is not enormously large.

GYPSUM.

The gypsum deposits of Michigan that are readily worked are limited to two localities, but fortunately they are at those two points of sufficient extent and accessibility to suffice for all the demands that may be made upon them in the future. These beds, justly estimated amongst the most valuable of our mineral resources, belong to the carboniferous limestone series, but occur in the regular order of superposition only in restricted localities. In other places in the same geological level, no indications of gypsum are found.

At Grand Rapids and at Alabaster Point, in both the western and eastern margins of the State, exist a succession of beds of this mineral which aggregate many feet in thickness. Thus far none but the upper beds have been quarried in, and generations will succeed one another before the necessity shall arise for resorting to the lower deposits to provide for the present rate of consumption of gypsum. The deposits which are now worked at Grand Rapids are of sufficient magnitude to meet all demands for this mineral, during an indefinite future, even were they to increase many fold.

The purposes for which Michigan gypsum is employed, are for the manufacture of stucco and for land plaster, and the mills for effecting both of these results are very elaborate and complete. The beautiful frescoes of Italy, that for ages have challenged the admiration of the world, are upon walls of stucco, and it is claimed that the product from the calcining mills at Grand Rapids is no-wise inferior for finishing walls and for ornamental purposes to any

in the market. Certainly it must be growing in public appreciation and demand, since its manufacture, which began in 1860, has steadily increased until it has reached a total of 1,533,185 pounds or 229,978 tons. But the chief use to which this mineral is now devoted is of modern origin and is other than for ornamentation. Its application to agriculture is the outgrowth of modern investigation, and it is by reason of its effects, which experience has proved to be so efficacious in promoting the fertility of our soil, and the prosperity and happiness of the husbandman, that the rich and ample deposits of this valuable mineral in our State become of so much importance. Taking into consideration our climate, our varied timber soil, which has been found to be so well adapted to clover and to wheat, the system of farming that prevails, which includes wheat and clover among its most promising of our products, it is more than probable that under such conditions as do exist, to keep up and enhance the fertility of the land requires the full use of gypsum.

Ground gypsum is thus the cheapest of fertilizers. Its preparation began at Grand Rapids with the early settlement of that region; at first in a limited way but with a continually widening area over which its appreciation extended, as its value came to be appreciated more and more and the facilities for its preparation and distribution were from time to time extended. Its total aggregate production since 1845 amounts to 798,744 tons.

SALT.

In 1885 Michigan produced more than one-third of all the salt consumed in the United States. It furnishes within a small fraction as much as all the other States and Territories combined—3,300,100 barrels,—nearly double that of the State of New York, which was formerly the leading producer. Heretofore the manufacture of salt in this State was confined to the Saginaw valley, but now the western margin has come in to supply its quota to the aggregate of production. The salt deposits are found to be no less in magnitude or in quality where the borings have been made on the shore of Lake Michigan than similar tests have proved them to be on the margin of Lake Huron, and great as its production has already become, it is likely to assume still vaster proportions in the future. Scientific analysis and practical experience have

taught that the best quality of salt may be made from the Michigan brine. The article placed upon the market which is made from it, is pronounced on all sides to be as pure and effective as are equivalent grades made anywhere in the world. The future of its production in Michigan is undoubtedly only a matter of cost and demand, the deposits of the mineral in the earth, within our borders, it may be assumed, exist in quantity far in excess of our ability to exhaust or even to practically lessen its amount.

The existence of salt springs in the territory was known to the Indians prior to the coming of the white men into the country. Even the manufacture of salt from the brine was undertaken in a limited, crude way by the early settlers. So well known was the fact of the presence of salt within our limits that the general Government made numerous reservations of land, which were supposed to contain salt deposits, and on the admission of Michigan into the Union it was authorized to make a selection of seventy-two sections of land where the indications favored the supposition of the existence of saline deposits. With the view of making these selections judiciously and for other like purposes, one of the first acts of the newly-created State was to provide for the prosecution of a geological survey. This important work was given in charge of Dr. Douglass Houghton, through whose zeal and intercession the measure was consummated.

The business of the manufacture of salt in Michigan as a recognized industry, may be said to date from 1860. Since that period it has grown to its present stupendous proportions, adding greatly to the wealth and reputation of the State. During this period of thirty-five years, thirty and one-half millions of barrels have been made at an average cost, during the whole period, of 96 cents per barrel. Thus we have in Lower Michigan two important minerals which exist in quantity, and are of great economic value to its people—salt and gypsum. Of coal we have little to boast. It is a region whose chief industry is agriculture, and the important minerals which it possesses are those which are immediately associated with this primal calling.

In that portion of our territory included in its bounds by Congress as an offset for the strip of land on the border of Ohio has grown up a mining industry of wonderful proportions. At the time of the admission of Michigan as one of the States of the Union, very little information respecting the northern peninsula had been ob-

tained beyond what was known to the early missionaries and traders. The country was too far removed from the marts of commerce and civilization to attract any particular attention. It had been run over, as we know, by explorers, hoping to find gold, or silver, or other precious minerals. Specimens of native copper had been found in sufficient quantity to establish the belief that deposits in place, of this metal existed in the country, but no systematic explorations had been made. The early settlers in the new territory were too much occupied with the labor of carving out homes in the wilderness, to trouble themselves greatly about this far-off portion of the State from which they were separated by water, and which they knew to be comparatively frigid and inaccessible, wild and inhospitable,—a region of primitive rocks and impenetrable forests; it is not surprising that time should elapse before its riches should be known and appreciated, and that the development of its resources should have been slow. The Upper Peninsula was given to Michigan by Congress as the final settlement of a serious dispute; it was thrown in to soothe the wounded pride of an irritated people.

The magnificent territory thus acquired was made a part of Michigan as an offset to a mere strip of land in comparison, yet which was regarded as possessing far greater value. But slowly the people of our State have awakened to the knowledge of the magnitude of this gain, in the exchange which was thus thrust upon them. We are coming to realize that our State possesses in the northern peninsula one of the most wonderful and valuable regions within the limits of the National domain. Rich in minerals in an unparalleled degree, producing ores of iron unsurpassed in quantity and richness, and native copper in an abundance and purity found now hereelse.

Two centuries and a half have passed since this portion known as the region of Lake Superior was first visited by the zealous representatives of the French nation. It was, in fact, the earliest-discovered portion of our great northwest. But while other and then more favored sections became the marts of commerce and teemed with the arts of civilized life, it was two centuries after the advent of the white man before the waters of the Great Lake bore other than the canoe of the red man, or of the venturesome *voyageur*; and the primitive solitude of the sombre forests which skirt its borders remained equally unbroken.

The Jesuit fathers explored the rock-bound coast of the great lake upon which they were the first to enter, and fearlessly penetrated the trackless wilderness which surrounds it, meeting every peril with simple, undaunted courage.

In 1668 a permanent mission was established at the Sault, and three years later one also at Mackinac, both of which places, for a period of 150 years, continued to be favorite resorts for traders and trappers engaged in the romantic traffic which for so long a period formed the basis of the business and commerce of the north-west. In times of peace or of war the transparent waters of the straits were dotted with canoes or batteaux; traders, *voyageurs*, and gaily-bedecked savages coming from every quarter, commingled in traffic and social revelry. It is a region replete with savage legend and romantic interest. But how greatly in contrast are the batteaux of the traders with the commerce of to-day, the products of the fur-hunter with the products of the miner. The simple paddle of the savage is supplanted by the powerful wheel of the steamship, and the batteaux of the *voyageur*, which bore away the fur of the beaver, is displaced by innumerable vessels that bend their masts to every breeze, and unmindful of portage or of foaming rapids, pass with ease and safety to the bosom of the great lake. The beautiful straits, so replete with tragedy and historical interest, no more reflect from their silvery waves the gleam of the scalping knife. Over the graves of massacred victims, who heard with terror the war whoop of their murderous foes, now echoes the shrill scream of the whistle of the locomotive and of the steam vessel. The council fires have gone out before the fiercer heat of the smelter; the crack of the hunter's rifle is supplanted by the ring of the axe of the lumberman; the silent trapper has fled before the advance of the miner and in the stealthy footsteps of the savage warrior treads the eager searcher for minerals. The rocks so rugged and forbidding to the early traveler now yield millions of wealth; by the remote stream, where was the home of the beaver, is now, perchance, the ponderous stamp mill, and far beneath the delving of the fox has penetrated the mining shaft. The railroad and ship canal have transcended the forest trail and ancient portage, and the rude wigwam of the savage and the simple chapel of the missionary have been displaced by growing cities and villages, teeming with life and activity.

The occurrence of copper among the Indians who occupied the country south of Lake Superior, and also in the rocks of the region which constitutes the copper range, early attracted the attention of the Jesuit fathers and of the travelers of the northwest, and frequent mention of its existence is made in their writings. An abundance of copper for the manufacture of trinkets was picked upon the shores of Lake Superior and elsewhere. The copper mass that was found on the bank of the Ontonagon river was seen and described by L'Hontan as early as 1688. In 1796 Capt. Jonathan Carver, who had spent three years in the country, published an account of his travels. He declares the region bordering on Lake Superior to be remarkable for the existence of, apparently, an abundance of native copper, and ventures the prediction that at some future day the mining of it here will be a great industry.

The first effort at mining was directed by Alexander Henry in 1770. Henry had spent sixteen years in the country and was a man of intelligence and education, but not an expert in mining. He chose as the point for his preliminary trial the vicinity of the great copper rock on the Ontonagon river. After spending all the money that the promoters of the scheme would furnish, and having obtained no valuable results, the undertaking was abandoned.

Henry, in reflecting on the matter, states the country must be settled and peopled before mining can be carried on to advantage.

But long prior to the period of this abortive attempt by Henry, the metal which is now so successfully mined and is the source of so much wealth and prosperity in this region, was sought for and mined by some unknown race that has left us no record to determine what manner of people they were, except the rude implements they used and the excavations which they made. The Indians who occupied the country at the advent of the white men had no knowledge of the matter. No suspicion existed that any mining work had ever been performed in this country until within a recent period. Then the discovery was made that the ground had been previously occupied and that these metalliferous veins had been long ago worked and large amounts of copper obtained, but at what time and by whom is only a matter of conjecture. Of the high antiquity of this work there can be no doubt, since the pits which had been made had become filled up with soil and

decayed vegetation, and were overgrown with large forest trees. In the pits, when cleared of the accumulated dirt and rubbish, have sometimes been found large masses of copper which the primitive workers had unsuccessfully endeavored to remove. At the Minnesota, Caledonia, Mesnard, and at many other mines, masses of copper of many tons' weight have been discovered lying at the bottom of the pits, covered with dirt and surrounded with stone hammers, pieces of burnt wood, and even copper tools and other evidences of former labor. These "ancient diggings," as they are locally called, were found to be so abundant and became so well known and familiar to those engaged here in mining as to cease to be a matter of surprise; in fact they have been, undoubtedly, of much service in directing attention to the copper lodes and as indicative of their probable value. As in the iron region the magnetic needle has guided to the discovery of many valuable deposits of ore, so in the copper districts these pits of the ancient miners extending along the outcrop of the copper-bearing deposits have silently betokened to the eager explorer where was hidden the object of his search.

An instance of the finding of a mass of copper at the Mesnard, in 1862, was related to me by Mr. Jacob Houghton. The mass weighed 18 tons of pure copper, and had been removed a distance of 48 feet from its original bed by the ancient workmen. Abundant evidence of their efforts was still manifest in the stone hammers and bits of burnt wood that were found about the mass and in the spot from which it had been taken. The mass itself was nearly buried beneath the accumulation of earth and decayed vegetation, and forest trees of maximum size were growing over it. Finds of this kind were not unfrequent in an early day; but to the Indians who roamed the country at the time of its discovery, to the Jesuits and *voyageurs*, this fact of ancient mining was unknown.

Dr. Houghton, who had made an examination of Lower Michigan and published the results of his observations in 1838, thereafter extended his observations into the northern peninsula, and his official report in 1841 drew public attention strongly to the region.

He was greatly impressed with the importance of making a systematic geological survey of the country and of doing it speedily and thoroughly. As the State appropriation was too small to be of much avail for extended geological work in a region so remote,

the plan was devised of uniting geological observations with the linear surveys, and to secure this combination Dr. Houghton himself took the contract from the government to make the linear surveys in the Upper Peninsula with the additional requirement that all outcrops of rocks, their strike and dip, and other characteristics should be noticed and specimens collected and returned, properly labelled and described, with the notes to the department. For this additional geological work an increased compensation per mile was allowed.

Dr. Houghton wisely inferred that by connecting the two surveys he would be able to command a great mass of facts which he could himself correlate and systematize. All his plans were ably seconded by Mr. Burt, well known as the inventor of the solar compass, and who largely directed the surveys of the Upper Peninsula, which were begun in 1840. Five years thereafter, and Dr. Houghton, while engaged in the scientific work in which he had unceasingly labored, was unfortunately drowned in Lake Superior; his plans were thus cut short of their consummation. Enough however was accomplished to entitle those who performed it to grateful recollection and to sadly awaken a deep regret that the icy waves of the great lake had not spared the gifted spirit of the devoted scientist whom they so ruthlessly engulfed.

Dr. Houghton's published statements had awakened, abroad, great interest in the Lake Superior region. Explorers and speculators flocked there in numbers to search for minerals and to secure possession of lands which were granted under permits from the war department. Nine hundred and sixty of these permits to occupy mineral lands were located in the Upper Peninsula, the larger number of which selections covered lands in Keweenaw Point, and this portion of the mineral country was teeming with activity before operations were conducted elsewhere. Old Fort Wilkins, the government fort at Copper Harbor, was the rendezvous for explorers, and the starting point for expeditions into the wilderness. Explorers were abundant; the field was new; it was uncertain what might be found, but all were stimulated in a high degree with enthusiasm and earnestness to find something.

Search for mineral has in all ages driven men to endless deprivations and dangers that scarcely another motive could have sufficed to impel them to meet. To this powerful incentive is due the settlement of remote portions of our land; it was the impel-

ling influence that stimulated the pioneers to cross the continent in '49 to the gold fields of California. It guided the adventurers to the cañons of Colorado, to the Black Hills of Dakota, to the desert plains of Arizona and to the aerial mountains of Nevada. The quest for minerals has carried railways across the continent, has made prosperous States and Territories, thriving towns and industry where were otherwise, perchance, unsettled and undeveloped territory.

Northern Michigan was the first of our great mining regions to which the steps of the explorers were directed; their hopes were high, but the results that met their anticipations were few, and the disappointments thus created were only relieved on the fortunate discovery of the Cliff and the finding of the masses of copper exposed in that vein at the foot of the greenstone bluff. This inspiring indication with the results that followed the further opening of the vein, established confidence in the country and stimulated renewed effort.

Keweenaw Point, Isle Royale and Ontonagon embrace many localities where the rocks are exposed to observation, and the first mining done in the copper range was naturally confined to the points of this description. Isle Royale alone of the copper districts has failed to reveal a paying mine. There are numerous copper veins and there is abundant evidence of the work of the ancient miners, but no company has operated there at a profit. Ontonagon, however, had its great bonanza in the Minnesota, as Keweenaw had in the Cliff. These two established the reputation of their respective districts and maintained them through many years. The success of the Cliff mine at the very outset of the mining industry contributed greatly to encourage others. With a capital stock paid in of only \$110,905, the mine returned to the stockholders during the 22 years that it was worked, the sum of \$2,627,660, or a little over 2,000 per cent.

Strangely enough out of the score of mines that have been opened and worked in the Keweenaw district in similar situations, barely one among them all has proved a source of profit to its owners. The hundreds of shafts that have been sunk unfortunately became, rather, receptacles for burying treasure instead of avenues through which it should flow out. But why the many veins should be comparatively barren and the limited few so enormously prolific is a curious phenomenon. It illustrates the uncer-

tainty of mining enterprises. The hope is sustained from what may be hidden from view ; the few rich veins that are found establish the fact that such do exist, and it is the expectation of discovering a similar store of wealth that stimulates to ever-renewed endeavor.

In the Ontonagon district mining work was carried on contemporaneously with that upon Keweenaw Point. The prospectors in the Keweenaw district inviting the attention of capitalists and investors in mining stocks to the probable value of the shares, which were offered, were not unfrequently embellished with a display of profitable results obtained at the Cliff; and in Ontonagon the fame of the great Minnesota mine proved to be a force equally attractive and potent. The fame of the Ontonagon region was world-wide. Accounts of the monster masses of pure native copper which the Minnesota and National mines yielded were everywhere published and nearly challenged belief. One of these masses found in 1857 was 45 feet in length, 9 feet in thickness and an average of $18\frac{1}{2}$ feet in width; it weighed upwards of 500 tons, and sold for more than \$200,000. The Minnesota was a rich mine from the start. The shareholders only advanced the sum of \$60,000 beyond which the product of the mine itself sufficed to supply the necessary capital; and for every dollar paid in the stockholders received back in dividends \$30.

These mines are of the past. The great copper mining district is at Portage Lake, in the vicinity of the channel which cuts across the Keweenaw peninsula. This area has no equal in the history of copper mining anywhere in the world, either in the richness of some of its deposits or in the economy with which they are worked. Perhaps no mineral deposit ever discovered has possessed the extent and uniform metallic richness of the Calumet & Hecla conglomerate. The mine has probably returned more money to the stockholders in proportion to the amount which they were called upon to advance than any other mine has ever done, and it is reasonably certain that the mine will continue to be as productive and profitable in the future as in the past. Some of the other leading mines in this district, which are opened in far leaner lodes, have established a record for economy of working that is without parallel in mining history. The Calumet & Hecla overshadows all others in the richness of its deposits and in the magnitude of its operations. The depth of the mine on the plane

of the lode is 3,400 feet and its length is 5,000 feet. The average production is 2,000 tons of refined copper per month, and the mine has returned to its owners in dividends the net sum of 28½ millions of dollars in the period of 18 years. Nowhere else on this continent, if indeed, in the world, is there so much powerful machinery employed in mining work. If it is a fact that this conglomerate deposit without diminution in richness or magnitude, continues to an indefinite depth to underlie the surface of this company's property, it foreshadows a metallic wealth that is almost limitless. Rich in the present, and assured of the future, it is no wonder that the shares of the great mine are a coveted possession.

One of the most notable schemes in the annals of mining was the sinking of the Tamarack shaft, recently consummated. Just one year ago,—three and one half years from the date of the commencement of the work,—the lode was struck at 2,270 feet below the surface. From being a thing of doubt and conjecture, the Tamarack is now a mine, already producing copper in large quantity. In every particular the mine has been a success, and the result has verified the best anticipations of the owners. It is a remarkable example of the verification of previous estimates and an example of the most rapid sinking in hard rock that has anywhere been done. When one reflects that this enterprise involves the task of sinking a shaft nearly half a mile into the earth's crust before even the fact could be determined whether the company possessed a copper-bearing deposit of sufficient richness to insure its profitable working, he will appreciate the boldness of the scheme, and when he realizes how successfully the task has been performed; how steadily the work progressed to its conclusion; how all the estimates that were primarily made have been fully verified in the results, he cannot but admire the skill of those who determined and directed the work. The shaft has an estimated capacity of 1,000 tons of rock per day, and another one of like dimensions is in progress of construction.

In the early days of mining in this State it would scarcely have been possible to have succeeded with such an undertaking as the Tamarack. But all that has changed. There is a new order of things. The power drill, high explosives, improved hoisting machinery, and numberless other valuable appliances that have been improved or added within a recent period, have resulted in

revolutionizing the mining industry and given it an immense stride forward. It is now only necessary to ascertain what should be done and the work is speedily undertaken and accomplished.

It is now 40 years since mining was fairly begun in the copper region of Michigan, and its whole history is a record of progress. The men who are now conducting the mining work are mainly from among those who have grown up with the country and who have demonstrated their fitness for responsibility during the development of the industry.

The metal is found in the rock in form varying from a microscopical fineness up to masses of hundreds of tons of weight. Formerly the bonanza mines were the ones producing great masses and the stamp lodes were little regarded. Now nearly all the mines are in stamp lodes, and the mass copper forms so small a percentage of the total products as to be of comparatively little consideration.

The manipulation of the stamp rock in the mills of our great copper mines has reached a high degree of perfection. Large expenditure is incurred and every means is adopted to secure the best possible results. The advance which has been made in this department of mining work from the crude iron-shod wooden stamp and simple separators of an early day to the stupendous structures with their intricate machinery that now so successfully perform the work, is certainly wonderful. The primitive mill wherein could be crushed and manipulated but a few tons of rock per day, and at a cost too great for a profit to accrue, has given place to those with a capacity of 1,000 tons per day, and with all the facilities for manipulation so complete that were it not an accomplished fact the low cost at which the result is reached would hardly be credited. It would scarcely seem possible that rock which yields less than 15 pounds of copper to the ton can be mined at the depth of 1,000 feet below the surface, hoisted, run to the rock house, sorted and crushed, thence taken by rail $3\frac{1}{2}$ miles to the stamp mill and there subjected to the various and intricate manipulations by which the mineral is separated that is subsequently conveyed to the smelting works to be cast into ingots; whence finally it finds its way into the market and is sold for \$1.65! It cannot, I say, be fairly credited that this is accomplished, the rock mined and manipulated at this low cost, and after paying all expenses there is a margin of profit on the year's

work sufficient to return to the stockholders in dividends the sum of \$40,000. Yet this was the result at one of the Portage Lake mines the past year, and is but a repetition of what has been accomplished in previous years, and in fact is but an example of what is done, in a varying degree according to circumstances, at all the leading mines in the Michigan copper region. The percentage of cost has been constantly reduced by the gradual increase in the magnitude of operations. All the elements that enter into the problem of successful mining are thoroughly studied by our mining men. As the price of copper diminishes, as the working of leaner lodes is undertaken, a more careful consideration of all the conditions that, when applied, shall result in the production of copper at such a cost as shall leave a margin of profit, has to be met. However difficult the problem is, it is successfully solved. The relation of all the factors which enter into it is understood and defined. Probably nowhere in the world is mining work in advance of that in the copper district of Michigan.

IRON.

While the knowledge of the existence of copper in the country bordering on the south shore of Lake Superior was one of the facts earliest made known to the world, none of those who early visited the country had, apparently, learned that the ancient rocks of this far-off region contained also in ample supply and richness, a mineral that has contributed in far greater measure to the world's progress than the one of whose existence they found so much evidence. But both were here in quantity and of a quality unsurpassed in the mineral regions of the world, awaiting the time for their discovery and development. It was destined that more than two centuries should elapse ere the existence of iron ore should be determined and made known to the world, and the small product which followed upon the heels of this discovery, has steadily grown into a stream that now annually pours into the markets of the country more than two million tons of ore.

Michigan is now the chief iron ore producing region in the United States. In fact, it furnishes upwards of one-half the total production of the country. The credit of the discovery of iron ore in quantity and in place is due to a party of government surveyors who, under Mr. Burt, on September 19, 1844, in running the east line of section 7, town 47, range 27, where are now the

Jackson mine and the city of Nagaunee, found outcrops of ore at several points. They state that they were led to make especial search for these deposits from the fact of observing along this line unusual defections of the magnetic needle, a matter which their instructions required them to note. In the following year, Mr. P. M. Everett, of Jackson, Mich., accompanied by four men and under Indian guidance, visited the same locality and found the remarkable outcrop, which they subsequently named the Jackson mine. This land he secured by a permit from the war department.

The party was not in search of iron ore. They had been led to hope, from the statements made by the Indians who had accompanied them, that they should find some metal which they deemed of more value than iron. The Jackson Iron company was formed and the land purchased of the government at \$2.50 per acre. The first president of this, the earliest of iron mining companies in Michigan was A. V. Berry, who recently died in Jackson. It was not only the first iron mine opened in the State, but has ever been and still continues to be, a mine of leading importance. The first ore was tested in a forge near Jackson in 1846, and in the following year the construction of a forge was begun on the Carp river, three miles from the mine, at which the manufacture of blooms was commenced in 1848. Thus the Jackson company was also the pioneer iron maker from the ores of Lake Superior. A few tons of ore were taken to New Castle, Pa., in 1850, and made into blooms, and two years later a larger amount was melted into pig iron in a furnace at Sharon, in the same State, and in 1856 a shipment of 5,000 tons was made. The Cleveland and Lake Superior iron companies were formed, and like the Jackson were engaged in the struggle for existence. The Cleveland company built a forge with two fires at Marquette, in which, and in the Jackson company's forge about 25,000 tons of ore were turned into blooms, but no money was made, and after 1856, the period when the shipments of ore from the country began, the work in the bloomerics was abandoned.

In operating these early mines both in the iron and in the copper districts, there was much to contend with which continually occasioned disappointment and financial embarrassment. Transportation at that time was irregular and expensive. There was no canal at the Sault, no vessels, no roads in the country, no

agriculture, no skilled labor, no supplies for men and teams, no materials for construction and repairs except such as were obtained by the uncertain and unfrequent communication from below.

It having thus become apparent to those who early engaged in the development of the iron mines that no suitable progress could be made until better facilities for transportation were secured, the construction of a railroad from the mines to the lake, 13 miles, naturally suggested itself; but though the matter was broached in 1851, it was not until 1857 that a railroad was completed and in operation. Previously, however, the iron companies had jointly built a plank road which sufficed until the railroad was constructed.

Of greater importance to the development of the mining regions was the building of the ship canal at the Sault de Ste. Marie. This artificial waterway around the rapids, which occur in the channel connecting Lake Superior with Lake Huron, through which vessels could readily and safely pass from one lake into the other, thus affording uninterrupted navigation between Lake Superior and the lower lakes, was the turning point in the history of Lake Superior mines. Previous to this everything transported by lake—and there was no other method of transportation at that time—was subject to portage and re-shipment in both directions.

Direct and complete commercial communication was imperatively demanded, and Congress having granted 750,000 acres of land to aid in the construction of a canal to overcome this barrier, in 1852, commissioners were appointed, a company organized and chartered, and the work of construction began in the spring of 1853, and in June, 1855, the canal was opened to the public. The following year the regular shipments of ore were begun to the coal regions of Ohio and Pennsylvania.

At the time of the completion of the canal another project of similar character was originated, which was to build a railroad from the mines to the head of Green Bay, on Lake Michigan, a distance of 62 miles. The work was not consummated, however, until December, 1863, at which time the road was opened to the public. At the terminus of this road at Escanaba, as had previously been done at Marquette, an extensive ore dock was built which rendered the matter of transporting ore from cars into vessels a work easily accomplished.

The development of the mineral resources of a country are so intimately blended with the improvement of its facilities for transportation as to render it essential in considering the progress of the former to give due credit to the latter.

Iron ores having a low value per ton as compared to more precious minerals, must have the advantage of cheap transportation before they can become available. The iron region of Michigan is especially fortunate in this regard; it has the cheapest and best of all means for transportation of its ores from the mines direct to the coal fields, and the necessary connections of the ore fields with the lakes, so that the advantage of water communication could be made fully available and have been met; each iron district of the peninsula is provided with one or more railroads. One may now travel from Detroit or Chicago to all points in the iron region and to the copper district, also, directly by rail. The profits of the transportation of ore has in recent years stimulated the building of railroads to reach the mines where has been made such development as gives a reasonable assurance of the possession of ore in paying quantity.

The development of the iron mining industry in Michigan has been made with extraordinary rapidity. In no iron mining region in the world has there been greater progress. In 1856, the period when the shipments of ore were begun, 6,790 tons were sent out. Twenty-six years later and the annual product reached 2,656,933 tons of 2,240 pounds, worth not less than \$12,000,000. It is but 30 years since iron mining was begun in a limited, primitive way, and already the aggregate production during these years is, in round numbers, 27,000,000 gross tons. This result has been accomplished in so brief a time, in the face of greater difficulties than have been encountered in any other iron region in the country, and in no other mining section has there been brought into the business so much energy, such varied and consummate skill in searching for ores and in adopting the means to develop them; in originating or availing themselves of the most effective methods, the most expensive and powerful machinery and appliances, as in the iron district of Michigan.

In times of depression there are many mines which, though not altogether valueless, but in which the ore, being of comparatively poor quality, are obliged to modify their operations, or to suspend altogether. Not so the old mines, those of established strength

and reputation; these continue with little abated force through good times and through bad. Whatever the conditions of the market, the output of the larger mines remains uniform.

For the first ten years, or until 1864, the Jackson, Cleveland and Lake Superior were the only mines from which ore was shipped, and these mines, which have contributed so greatly to establish the reputation of the district, are still among the larger producers; still maintain their early supremacy both for quantity and quality of ore. In fact the product of the Lake Superior mine in 1882, of 296,509 gross tons, has never been equalled by any single mine in this country.

Until 1877 the production of ore in this State was confined to Marquette county. The chief mines of this district yield hard specular and magnetic ores, and these ores still constitute 60 per cent. of the entire product of this district. Nowhere else in the State is strictly hard ore obtained, and the district is still the largest producer, having in 1885 afforded nearly a million and a half of tons.

In 1877 shipments began from the Menominee range which, within a year thereafter, reached a million tons annually, and it still holds the place which it immediately assumed of being a large producer of most excellent ore. Some of the mines in the Menominee range are among the most remarkable in the State, both as regards quantity of product and quality of ore. But even the wonders of this surprising section seem likely to be eclipsed by the new district which, though the latest to claim our attention, is possibly not the least in value. The development in this, the Agogebic range, is the most important addition that has been made to the mineral interests of the State since the discovery and opening of the great ore deposits in the Menominee region nearly a decade ago.

There is much in the rock formation of our iron region to tax the patience and skill of the miner and the geologist. The ore occurs in the rocks with which it is associated in every manner of form of deposit. These deposits possess great irregularity, and there is little certainty where they may be found or to what extent they will continue. Some of our mines already have considerable depth with no sensible lessening of the ore. The opinion has prevailed that the hard specular ore deposits are more persistent than the soft. That there is ground for this theory cannot be

denied. The old mines which are producers of specular ore, continue, as of yore, to yield their accustomed product. The mines that early gave to this country its reputation still continue in an equal degree to maintain it.

As time goes on there must be an accumulation of scientific facts that shall lead to a better elucidation of the much complicated geology of our iron region. There are abstract problems to be solved, in which many elements are to be considered. The Lake Superior region is geologically of great antiquity: the rocks have been subjected to every manner of elemental force and change of character and form. It is a tangled skein that requires every appliance of modern science in the hands of the skilled observer to attempt to unravel it. The satisfactory solution of the problem of the origin of our iron ore deposits remains to be given; whether through chemical action the iron oxide occupies the space formerly held by some other mineral, which is displaced; whether the ore beds were originally jasper out of which the silica had been dissolved, or whether of vegetable or igneous origin, or originating from several causes, is a question yet to be satisfactorily answered. It is not difficult to broach an hypothesis and to discover facts to support it. But the theory must be found that covers all these facts, and all the facts must be discovered and correlated. The great forces that were at play in the formation of these ore beds have left their traces in the rocks, and the record may be deciphered. Very much has been done in this direction; some of the laborers in the field of investigation in our iron region have advanced our knowledge vastly, but we have not yet reached the full interpretation of the history which the rocks themselves have for ages held locked up in their constituent crystals. Fortunately this work is in proper hands.

Notwithstanding the thousands of workmen, embracing all nationalities, employed in our mines, entire harmony has ever prevailed between them and their employers. The strikes and disgraceful conflicts which have been so common elsewhere are almost unknown in our mining region. No general strike has ever occurred, and none has been of long duration. Industrious miners are able to provide well for themselves and their families. They are well fed, well clothed and housed. The children enjoy the advantages of good schools. Our beneficent school laws find no better upholders than the mining districts of

the Upper Peninsula. There are many men in this peninsula now prominent in their callings, who began as common laborers in the mines, but who, by their industry, thrift and intelligence, have accumulated wealth and acquired positions of influence and importance. Certainly our mines afford as favorable opportunity for the improvement of one's fortunes as are found in other vocations.

Twelve years ago in the iron region were found only open cut mines, now nearly all are underground and many have very extensive openings beneath the surface. Not unfrequently one will meet with, in visiting one of our important mines, a succession of great cavities that, if a stranger, will excite his curiosity and wonder; but a sudden trembling of the earth beneath his feet and muttered sounds ascending from its depths remind him that the wide chasms that meet his eye are not the only ones embraced in the ground upon which he stands. Investigation reveals to him the fact that far below the level of the cavities into which he gazes are others wherein the light of day never enters—caverns wrought by brawny men, no less in magnitude than these which he openly beholds. And anon, as he ponders, the rumbling of the ascending skip strikes his ear, and there is revealed to him in its contents, as it comes into view, the prize for which all this toil is endured.

SANDSTONES.

The sandstones of the Upper Peninsula which skirt the south shore of Lake Superior afford deposits of brownstone exceedingly valuable for building purposes. Quarries in this rock have been opened at Marquette and L'Anse, and the stone which has gone to Chicago, Detroit and Cleveland, etc., has become greatly esteemed for its beauty of color and excellence of texture. Architects everywhere who have examined it are enthusiastic in its favor. The brownstone is one of the layers from the Potsdam series, which at the time in the Silurian period covered the entire region, but is now, owing to the subsequent action of the denuding forces of nature, confined to a limited area. To these sandstones belong the celebrated Pictured Rocks, so frequently described in the early references to this country.

The quarrying of sandstone is only in its infancy, but these deposits are a mineral resource of undoubted future importance.

SLATE.

It is well known that we possess in the vicinity of Huron Bay extensive deposits of slate that afford this material for roofing and other purposes, of an excellence that is not excelled by any produced in the United States or elsewhere. In color and texture this slate leaves nothing to be desired, and it undoubtedly exists in unlimited quantity. There is no dissenting opinion from the judgment expressed by all who are qualified to determine, that the rock is adapted to the manufacture of not only the best roofing slate, but for such other purposes as the superior grades of this mineral are elsewhere employed. The deposits are contiguous to Lake Superior, thus giving the advantage of cheap water transportation to the important cities of the country. Thus far but a single quarry is worked, which produces about 5,000 squares per annum.

GOLD.

From time to time in the history of our northern peninsula public interest has been awakened in reputed discoveries of gold and silver; but while nothing of apparently much importance has grown out of these discoveries, they have kept alive a slight degree of expectation, a belief in the possibility of the existence in our rocks of veins of quartz which carry gold and silver in paying quantities. Indeed, the recent results attained at the gold mine now working in the vicinity of Ishpeming (the Ropes), indicates, as do many other facts which have come to light in the past, that the hope is well founded.

We regard Michigan as a great agricultural State. We speak with pride of the leading rank which it holds for the production of wheat, of wool, of fruit and many other articles of agriculture for the production of which it is noted; but the average farmer, while congratulating himself upon the amplitude and variety of the production of the fruits of his calling, may overlook the fact that it is for its minerals, and not for its agriculture, that our State is chiefly remarkable. That it is only as a mining State that Michigan ranks first in the Union.

Our mineral interests are the greatest of which our State can boast. They probably contribute more largely to the sum of human prosperity than do any other of the products of the State. Our annual production of iron, of copper, and of salt bear a

larger proportion to the total of the world's supply of these minerals than does the yield of our farms to a like aggregate of agricultural production. It is safe to assume that the loss of all the grains and fruits which our soil so bountifully supplies would be less seriously felt by the world at large than would the extinction of the product of our mines. Mining is the chief industry of a large section of our State ; of an area comprising more than one-third of its territory and occupied by more than 120,000 of its people. It is here an industry which is comparatively new, but what wonderful progress it has made ! To what a position it has attained and to what a future it is destined !

During the brief period of the third of a century there has been accomplished a development in our mining region which may well excite our wonder and admiration. And when we consider the magnitude of the industry that has caused it, its apparently unlimited capacity for enlargement, and the effect which this increase must occasion in the growth and importance of the country, we may well view with complacency the past and be pardoned for entertaining seemingly extravagant hopes of the prosperity which the future has in store for it. The early missionaries who first traversed the coast of our mineral peninsula, encountered much at which they marvelled ; but more than two centuries have elapsed since its wonders were first described, and it is marvellous and wonderful still. The reality of its resources transcend the most sanguine conjectures of the early travelers, and this "fag end of creation," as Baron L'Hontan epitomizes it in 1688, stands among mineral districts as does the great lake, whose waves it limits, among fresh waters, the Superior. The Upper Peninsula is no longer an isolated, dependent region ; it is now accessible by numerous lines of boats in summer, which regularly ply between its harbors and the ports of the east, and by railway thoroughfares which at all seasons afford direct and rapid communication with the country. Its position as a mining region is established, and the reputation of its great mines is world-wide. It is a region which has developed a great prosperity and has still greater possibilities. Its mining resources are permanent, and anon in the future must be added a diversity of other interests for the conduct of which there is every inducement. The basis of all its growth and prosperity must be in the future as it has been in the past,—its mines and minerals.

Its deposits of iron and copper are so extensive, so phenomenally rich and pure, the region is possessed of such cheap water communication, has such an abundance of timber, is so elevated and healthy, as to place it far in the van with the chief mining regions of the world.

This northern peninsula of Michigan, from its great extent of coast line of navigable waters, from its accessibility and the ease with which it may be reached and traversed, from the coolness and salubrity of its air and climate, from the extent and richness of its mineral deposits, stands pre-eminent among mineral districts. Its deposits of iron and copper are nowhere surpassed, and from no other region can these minerals with less difficulty, or with greater economy, be mined and transported to the markets of the country.

ADDRESSES IN THE HALL OF REPRESENTATIVES.

HON. HENRY CHAMBERLAIN, PRESIDING.

MEN AND WOMEN OF MICHIGAN : We have assembled to-day to celebrate the semi-centennial anniversary of the admission of Michigan into the Union of States.

The large number of persons present, and the intense heat, I am certain will not prevent you from listening to the able men who have consented to address you on this occasion.

Remember, if you are crowded and the heat is oppressive, that our fathers on a hot June day, more than a hundred years ago, fought the battle of Bunker Hill.

I take pleasure in presenting to you (he needs no introduction), ex-Chief Justice Thomas M. Cooley.

THE SEMI-CENTENNIAL OF MICHIGAN.

HON. THOMAS M. COOLEY.

Generations of men come and go, ripening with years for the inevitable harvest ; but institutions in harmony with eternal laws may expand and strengthen as the cycles of time roll on, and with every passing century strike their roots deeper, and take on some new form of perennial youth.

It is the founding of a new commonwealth we celebrate to-day ; one of a mighty family, whose founders accepted equality as the true germinal principle of States, and trusted, by just and equal laws to ensure, as far as government may do so, the general happiness of all. Availing themselves freely of the wisdom of past ages, but relying mainly on the results worked out in the crucible of experience, they seemed to strike the true mean between the conservatism that blindly and reverently follows the past, and the wild and restless radicalism that still more blindly attempts to anticipate the future, so that they had the unique fortune to be

the founders of institutions which other nations at first despised, then distrusted, then came gradually to respect, and at last to admire and to imitate, until the mother country herself crowns with her praises the memory of Washington, thankful that through the overthrow of her armies there was given to the world the priceless boon of American liberty.

It was certain from the beginning of time that a notable commonwealth would some day grow up between the great lakes. The abundant provision which nature had here made for the wants of man was prophecy for it. Such fertility of soil, such wealth of forest and stream and lake and mineral deposit were certain, when the sun-light of discovery made them known to the world, to attract a colonization intent on their development. And if the lower peninsula in respect of natural resources left anything to be desired, the upper peninsula more than made good any deficiency; for its inexhaustible mineral stores only awaited the magic touch of skilled industry to be converted into productive wealth for the enjoyment of such fortunate people as should possess them.

A panoramic historical view of this region, beginning with the first meager accounts we have of it, would be of intense interest, and give us many startling surprises. First, we should see on a background of almost total darkness the desperate struggles of powerful tribes of Indians contending in their savage way for its possession. Then a day of promise seems to dawn when the Jesuit fathers come, inspired with the purpose to convert the wandering tribes of savages to the true faith, but destined to give tireless labor for a harvest which seems but scanty when they come bringing in their sheaves. Not altogether in vain, however, do they labor, for on the picture we trace how the gleam of their mission fires lights the way for trade and settlement, and how the early commerce finds protection in the rude cross planted at the missions, about which the Indians gather with their furs and peltry for barter. Shortly appears upon the canvas the venerated figure of Father Marquette, who in 1668 plants at the Sault Ste. Marie the first permanent settlement in Michigan, and three years later founds the mission of St. Ignatius on the Straits of Mackinaw. Thirty years more roll on, and the Chevalier la Motte Cadillac is seen to select with unerring sagacity as the site for his town the commanding position now held by the commer-

cial emporium of the State; but the town he established grows but feebly under the monopoly of trade which represses the energies of its people until it passes under British control. Then immediately the gloomy and threatening countenance of Pontiac rises before us, and we have in succession the dramatic surprise and capture of Mackinaw with the massacre of its garrison and traders, followed by the close and persistent siege of Detroit, in the progress of which, first romance, and then tragedy, excite intense interest. And then all through the war for Independence the lines of British influence over the Indians are seen to center at Detroit, which is the mart for captives, and the place where scalps, torn from the heads of men, women and children in the back settlements, are gathered in and paid for. Even after the treaty of peace the baleful British influence over the Indians is not withdrawn until two American armies have been disastrously repulsed, nor until a third, under Gen. Wayne, has annihilated the savage power.

Willingly we allow so gruesome a canvas to be rolled up from our sight, that we may open the record-book of American supremacy. And here we find the very first pages radiant with the history of that grand and inspiring event in our national life, the founding of territorial government for the country northwest of the Ohio, on the principle of entire and absolute exclusion of chattel slavery.

When the founders of the new government thus took stand in advance of their age, they builded not wisely merely, but better than they knew, for their act was such "a deed done for freedom" as sends "a thrill of joy prophetic" through the universe. In thus putting slavery under perpetual ban a blow was struck at oppression everywhere, whose echoes were never to die away until the conscience of the civilized world should be so quickened that in America every shackle should fall from human limbs, and even in distant Russia church bells should ring in a jubilee of emancipation.

In the fullness of time Michigan, fourth in the list of free daughters of the old Northwest Territory, was decked with the honors of incipient statehood under the same perpetual dedication to equal rights and universal liberty. It was fortunate in its name, which is American, derived from Indian words signifying a great lake. Mr. Jefferson had proposed for it the classical

appellation of Chersonesus, but a kindly Providence spared it the hard fortune to be thus named, and when it was organized in 1805, inspired its godfathers to give it the appropriate christening. In other particulars it was not so fortunate, and the early annals form dismal reading. In the very year of organization Detroit was wholly burned to the ground, and its people rendered homeless. And while the little settlement was still struggling with adversity came on the war of 1812, and the revolutionary soldier who had been made Governor and entrusted with the defense of the lake region, proved wholly inadequate to the military responsibilities of his position, and Detroit, under the most humiliating circumstances, was delivered into the hands of the enemy. Then came the massacre of Kentucky's brave sons at the River Raisin, and the banishment of worthy citizens who refused to turn traitors; but competent leadership soon breasted and turned back the tide of success, and in little more than a year Perry had won possession of Lake Erie, Harrison had chased the British army across the river and broken it up in a decisive battle, and Col. Lewis Cass had been sent to Detroit as Military Commandant, soon to be followed by a commission as Civil Governor.

If the first appointment of Governor for the Territory had proved unfortunate, in the second the people found ample compensation. Gov. Cass had been a pioneer in Ohio; he knew the west and its needs, and during the war he had become well known to the people of his new government. He was of vigorous, intellectual and physical constitution; he was a man of culture and courtesy; he was of pure life, so that with no affectation of dignity he commanded respect for abilities and deportment, and became a social force of marked and permanent benefit to his people. In his administration of public affairs it was soon perceived that he was a statesman in no narrow sense; that he thoroughly understood the interests committed to his charge, and that he might be relied upon to advance and cherish them with an energy proportioned to a nature so robust and vigorous.

To many who gather here to-day it would be repeating a thrice-told tale to recount how Gov. Cass, by just and firm treatment of the Indians, preserved their friendship, and purchased in fair convention vast tracts of their lands; how he contributed to the opening of the Territory to settlement by means of good roads and the bringing of the public lands into market; and how, with

a statesman's perception of the real point of danger in a Democratic republic, he urged upon the Legislature from session to session that competent provision should be made for educating in the public schools all the children of the Territory. Nor was his interest in public education bounded by the narrow limits of elementary instruction, but comprehended the best and the highest, so that even in one of his treaties with the Indians we find him making a beginning in University endowment.

When Gov. Cass was called to the government but few settlers of American birth had as yet located in the Territory, but these few were

"The first low wash of waves where soon
Shall roll a human sea."

The population swelled rapidly until in 1830 it numbered upwards of thirty-two thousand. But in the following year the Territory lost its chief magistrate who was summoned to a seat in the cabinet of President Jackson. The loss was not made good by the appointment of Mr. George B. Porter of Pennsylvania, to the vacancy, for the new appointee was slow in coming to his government, and was much absent from his post afterwards. Under the law in his absence the duties were performed by Stevens T. Mason, the territorial Secretary, who, when the responsibilities of government devolved upon him was still but a boy, without legal capacity to buy a horse, or give a note of hand. But the acting Governor was ambitious and able, and he was shortly made the leader in a movement for State government. In 1835 the population was found to exceed sixty thousand, and under a claim that this, by the Ordinance of 1787, entitled the people to organize as a State, a Constitution was formed and adopted by popular vote, and a full complement of State officers elected and installed, with Mr. Mason as Governor.

Had there been no opposing interests, it is probable that these proceedings, though plainly irregular, would have been sanctioned by Congress and the State received into the Union. But a boundary controversy with Ohio involving territory of which the chief value centered in the rising town of Toledo, complicated the situation; the military were called out to defend the respective claims, and for a time the Toledo war raged. But the war was in prudent hands, and though drums were heard not a funeral note brought

sorrow to any household. Ohio had the advantage of position, for she was already in the Union with voting power, and President Jackson, who could appreciate this, disallowed the claims of Michigan to State government and sent John S. Horner on as Secretary, to be acting Governor and restore peace. The Secretary, on coming, found no government awaiting him, and people only ridiculed his pretensions.

There was thus a State government repudiated at Washington and a territorial government rejected at home, when Congress intervened with the compromise proposition that Michigan in exchange for the Territory in dispute should accept the Upper Peninsula. The offer was emphatically rejected, but an irregular convention of people having subsequently voted to accept, the authorities at Washington pretended to be satisfied with this, and declared the State admitted to the Union with its present boundaries. It was a piece of sharp practice, and the people protested, but even while protesting they acquiesced, satisfied in their hearts that for all that was taken from them princely compensation was made. And thus the Toledo war came to an end. One belligerent had won all it contended for and the other a great deal more, and Franklin's aphorism that there never yet was a good war, was proved to admit of exception.

The State was received into the family of the American Union on January 26, 1837. The occasion invites some notice of the people as they then were, of their antecedents and characteristics, that we may the better judge of the motives underlying and permeating the social and political community.

The motives which in past ages have led to colonization have not commonly been such as strict morality could approve, and in history we have many stories of great wrong, and very few in which the motive apparent was higher than national ambition or greed. The colonization of New England was exceptional, but it has been overpraised as if it were a planting of States on the great principle of freedom in religious worship. This it was not and could not have been; for the world was not then ready for such a planting. What our New England forefathers did was to brave the hardships and privations of the wilderness, that they might establish civil and religious liberty for themselves; and this was noble even though they invited and desired no participation by others.

Religious motive in the ordinary sense had nothing to do with the colonization of Michigan. The early explorers were missionaries, but the French settlers came for trade and barter, as did also those of other nationalities. The later immigrants were for the most part men of very limited means, who in their plain way would answer an inquiry for their motive in coming west with the common response that they had come west to better their condition, and in order that their children might "grow up with the country."

The motive as thus stated seems common-place and to a degree selfish. We hear it with a certain degree of respect, but we are not thrilled by it, or excited to high admiration, as we are when we read how some self-sacrificing patriotic or religious motive has inspired some great movement or led to notable deeds. But a motive may seem common-place and even selfish, and yet be grounded in the noblest sentiments of human nature. In the building of great States of vigorous and wealth-creating people, selfishness comes first though philanthropy may come later, and the selfishness is blamable only when excessive. The greatest of apostles in his pointed condemnation of the man who provides not for his own "and specially for those of his own house," has shown us in what category he places this duty, and reason, as plainly as the preacher, declares that the duty to place those whom nature has committed to our care above the want that causes suffering and breeds repining, is not social merely but religious also. In performing it we may lift those dependent upon us into that condition of comfort and content from which shall spring the sentiment that life is a beneficent gift from the Creator, to be acknowledged with continuous gratitude and well doing.

It can justly be said of the pioneers of the State that they performed faithfully and well this duty of care for their own; and in doing so they demonstrated the harmony of their aims and their labors with the great purposes of the Creator. The foundations of a great State were laid in industry, frugality and the domestic virtues.

If we look into the social conditions of the period, we behold an exceedingly primitive society, in which wants were few and the measure of strict economy ample for their gratification. The older towns of the State were still largely French in population. Among these were all grades of intelligence and all conditions of

worldly prosperity; and while some took up business in a large way and with ample means, others were content with the small gains and hard fare of trappers and fishermen. But the majority of the people had found their tedious way into the Territory from other States, in their heavy tented wagons which then ploughed the ruts of every forest road, but are now as much unknown in Michigan as the buffalo or the beaver. They had come with an inspiration as absorbing as that which moved the old crusaders, and far more intelligent and elevating; an inspiration to seize the golden moment when peacefully with their small means they might possess themselves of homes where prudence and economy, after some discipline of pioneer hardship and deprivation, would be sure of just rewards, and where ample means for the nurture and education of a hardy and vigorous offspring should be within the reach of every industrious citizen. When before in the history of the world, in what other country but America, was such tempting promise held out for the acceptance of honest industry?

It was a hard life the pioneers led in the woods, but every acre which they brought under cultivation added to the value of their possessions, and they could forego without repining many of the most ordinary comforts of life when the future promised such abundant compensation. It was a hardship for husbands and brothers; but let us be just and admit that for wives and sisters it was still harder. Many of them had been reared in competence and accustomed to luxuries, but they had left these behind them without repining, and had brought to the west no notions which would preclude their giving effective assistance in any labor, indoors or out, to which the feminine strength was equal. And it must be said that there were few tasks to which it was found unequal, for the willingness to be helpful begot the strength necessary for the purpose, and the happiest days of many an honored woman's life were when she was piling and burning the brush in her husband's clearing, and when the sun went down, refreshing him and herself with supper from the brimming milk-pail which she brought from the pasture. If she was a lady in her eastern home, she was not the less so with rougher hands and coarser garments and heavier burdens, but with not less buoyant spirits in the woods where only her husband's axe woke the reverberating echoes. She wore no diamonds and no laces; she may have known little and cared less for fashions; but she did her full share in giving to the

new State the muscle and the brain, the industry and the strength of character that in a few short years were to bring to it both wealth and greatness. The song of the spinning-wheel in the log cabin was as cheerful then as is now the melody of musical instruments in many thousand happy homes which owe their abundant comforts to the patience, the self-denial, the industry, the energy and the endurance of those who first opened the forest to the sunlight. The men felled the trees, and the women, "keepers at home," made the home worth the keeping. In that day of small things it was woman's mission, which woman faithfully performed, to

"— bring to her husband's house delight and abundance,
Filling it full of love, and the ruddy faces of children."

But if the pioneers could dispense with many comforts, they could spare none of their accustomed institutions. They must, therefore, have the common schools, which to their view were a necessity to both the social and the civil state. The provision for these was on a scale of economy corresponding to that which governed domestic expenditures; and often the child had to travel a tedious distance to school, where the instruction awaiting him was still more tedious.

Then, too, these were the semi-barbarous times, when every "Master of the district school" was "brisk wielder of the birch and rule." But poor as they were, these pioneer schools were harbingers of better things; the rude forerunners of a system not surpassed in the world, and seldom equalled. All education must be largely a process of self-training, and the child of inquiring mind with only the most imperfect help at first, may make all things about him, animate and inanimate, his teachers, finding "tongues in trees, books in the running brooks" to instruct him.

In these primitive schools many a boy acquired such elementary instruction as enabled him in time to become a man of mark in the State; and they should be mentioned with respect, for places of honor and trust, from lowest to highest, have been filled with their graduates, who in many cases wielded wisely and well an extensive and valuable influence.

The early settlers in Michigan were for the most part young men who first entered upon the stage of independent action in their new homes. This was in some respects an advantage to the State, for the vigor of youth inspired all industrial and political

life, and made itself effectively useful where the conservatism which comes in later years might not have ventured. But in the confident and restless energy of youth may lurk dangers also ; and as these young men contemplated the natural advantages and resources of the State, hope told a flattering tale of the rapidity with which it might be made great and wealthy by prompt and efficient development, and pictured results so alluring and so apparently attainable, that sober reason for the time was mastered.

General causes greatly magnified the dangers. When the State Government was formed an eager spirit of speculation pervaded the country. Wild lands seemed to offer the best means for its gratification. The Erie Canal had been constructed ; railroad building had begun ; the West was thus brought within easy reach of the seaboard, and the emigration to it must be large and continuous. Land in the West must immediately begin to advance in value, and the advance must continue until prices should approximate those in the Eastern States. Such was the confident and not unreasonable expectation. Wild lands, therefore, became the chief object of speculation, though by no means the sole object.

Some faint idea of the prevailing rage may be had from the statement that in 1834, fifty per cent. more public land was sold than in any prior year ; that three times as much was sold the next year, and that the quantity sold in 1836 equalled all the sales from 1821 to 1833 inclusive. The hurricane of speculation swept across the country, but the cyclone struck here. The State was easily accessible, and immigration poured over it in such a torrent that it seemed like the concerted migration of a great people. In the three years following 1834, though the tide was greatly checked in 1837, the population of the State was doubled, and lands in enormous quantities were held for speculation, much of it under purchase money mortgages far exceeding actual value.

Time will not admit of our giving in detail the story of what followed ; how to realize the flattering hopes of speedy wealth, the State was induced, under the leadership of its sanguine Governor, to enter upon an extensive system of internal improvements by canal and railroad when it had not money to dig a mile of ditch or build a mile of road ; how for this purpose it mortgaged its future by a loan far beyond its ability to pay even

the interest ; how bonds were issued for this loan and by a breach of trust put upon the market when only a moiety of the loan had been received ; and how to meet its current expenses and interest resort was had to State scrip of doubtful constitutionality. The great crash soon came when the bubble of speculation broke. The market value of lands went down faster than it had ever gone up ; wild lands became unsalable at any price ; debts contracted in buying them bankrupted the purchasers, and the overtrading which had been a part of the general inflation was succeeded by such sharp reaction as made disaster general. In two years from the time when speculation was at its highest and expectation most buoyant, the business of the State was prostrate ; credit, public and private, destroyed, bankruptcy general, and large numbers of persons looking about anxiously for the means of subsistence. Only among the officers of the law who were busy in bringing suits and serving writs, was prosperity apparent, and they had found their harvest time.

The bubble had burst, but another which had been inflated at the same time to dangerous proportions was now further expanded as a means of relief. And here we open another chapter in State history which can only be mentioned but not entered upon, the chapter which concerns that species of financiering appropriately termed wild-cat banking ; banking without legitimate banking means or convertible security, and therefore only calculated to play the part of beast of prey. Enormous amounts of worthless paper were issued ; the wild banking and the wild speculating going on hand in hand until the latter collapsed, threatening to pull down the worthless banking system with it, when the Legislature interfered and authorized suspension of bank payments. Even then the process of creating banks was not stopped, and the extraordinary spectacle was witnessed of banks coming into existence in a state of suspension ; born bankrupt and lifeless except for plunder. Before the year was over in which the State was admitted to the Union it had gone through all the stages of unreasoning speculation ; it had been compelled to refuse recognition of State obligations disposed of without consideration received, though the refusal subjected it to a plausible but unjust charge of repudiation ; it had begun railroads and canals it had no means to construct and did not yet need ; and it had legalized a great pack of beasts of prey in the form of banks, which had flooded

the country with dishonored currency now sinking rapidly to utter worthlessness. Such was the mortifying result of the attempt to find a quicker and easier road to wealth and greatness than by the common highway which industry and frugality open. The suffering from the collapse of fictitious prosperity was general, but here, as in all similar cases, losses from bad currency fell in largest measure upon persons of limited means, who had fewest opportunities to keep advised of what was coming, or to provide against it when it was perceived.

At the beginning of 1839 the lowest depth had been reached and the golden visions which had dazzled the eyes of the people had faded away. State and people alike were oppressed by debt, and the public works were unfinished and unprofitable. Nothing but a long course of sober and persistent industry with strict economy could bring effectual relief. But reason was now restored; and it was an inspiring spectacle to see with what unhesitating confidence the people put the past behind them, and beginning at the very bottom, applied themselves to planting in steady labor, in frugal living and in honest dealing, the foundations of public and individual prosperity.

The errors of Gov. Mason as executive are very patent, but in some particulars he is to be highly commended. He was a man of public spirit and good purposes, and he had the best interests of the State at heart. His judicial appointments, among which were those of George Morell, Epaphroditus Ransom and Elon Farnsworth, were excellent. And he did an incalculable service to the State when he made John D. Pierce superintendent of public instruction, and gave him the assistance he needed in putting in force his views upon common school and University education. And here he had the help of Isaac E. Crary, the first representative of the State in Congress, well qualified by culture and ability to be a safe adviser. Nor must we forget that it was during the administration of Gov. Mason that a geological survey of the State was provided for and put in charge of that enthusiastic student of Nature, Douglas Houghton; a survey which has been carried on to this day with most valuable results. The good he did, therefore, fully justifies the warm place our boy-governor still holds in our hearts.

The financial crash carried down with it the Democratic party, which had been in power when madness ruled the public councils.

In the election of 1839 William Woodbridge, a native of Connecticut, was chosen Governor. He had been in the Territory twenty-five years, and had held the office of territorial secretary, delegate in Congress and judge of the territorial Supreme Court, which last office President Jackson had taken from him to confer upon one of his own supporters. He did not serve out his term as Governor, being transferred to the Federal Senate to succeed John Norvell, who with Lucius Lyon, had been the first members. Mr. Lyon had previously given place to Aug. S. Porter. Lieut.-Gov. J. Wright Gordon then became Governor.

The Democratic party was restored to power by the election of 1841, with John S. Barry as Governor. Mr. Barry was a native of Vermont, who in agricultural and mercantile pursuits had acquired a reputation for a prudence not too narrow to be thrifty, for methodical business habits and for integrity. He had been sufficiently in public life to be known to the people of the State, and his characteristics seemed to indicate him as the suitable man for executive, at a time when the people were still burdened with private and public debts, and when in the management of public affairs strict economy and accurate business habits were of the first importance. He was not chosen for popular manners, for he neither had them nor apparently cared to acquire them, but he was nevertheless selected in 1843, and again recalled to the office in 1849 after having been four years in retirement.

The administration of Gov. Barry was eminently useful to the State. It gave to the State an illustration of rigid economy and careful method in the management of public affairs which determined the character of financial management for the State thereafter. It was of value also for its influence upon private habits and expenditures; and the State and its people from that time went on steadily and strongly in the direction of improvement and accumulation. The times demanded an executive to whom the facile and flattering tongue of the demagogue was denied, but who could make austere and uncompromising public virtues acceptable to the people; and Gov. Barry fully met its requirements.

In the election of 1845 Alpheus Felch, a native of Maine, still with us and worthily associated with State history from the first, was made Gov. Barry's successor. Under his administration the State relieved itself by sale of the incubus of its railroads. The sale was demanded by a public sentiment practically unanimous,

and it has never been regretted. The State was at once put in condition which made payment of its debt easy, and its financial credit became unquestioned and unquestionable. And now for a second time the State lost a good executive by the transfer of the Governor to the Federal Senate. William L. Greenly, the Lieut.-Governor, succeeded him, giving way in 1848 to Judge Ransom, a native of Massachusetts, who had retired from the bench three years previously.

The old pioneers of the State were gratified by the nomination of Gov. Cass for the Presidency in 1848, naturally preferring him, as they did, to any other candidate of his party. The Governor, after serving in the cabinet of President Jackson, had been sent as minister to France, and on his return was elected to a seat in the Federal Senate. He resigned his seat pending the Presidential election, but dissensions in his party proved fatal to his prospects, and a man without known political principles was elected over him. Gov. Cass was a statesman of the old school; upright, patriotic and decorous; but he was overwhelmed by a rising tide of anti-slavery sentiment which he could neither resist nor fully understand, and new men, who were ready to grasp with aggressive ardor the living issues of the time, soon supplanted him in public notice. In this he but shared the fortunes of his great contemporaries, Webster, Clay and Benton, who for a time struggled vainly to master the logic of events, hoping against hope that by new compromises they might preserve the national peace and repress a conflict which the laws of mind and of morals made irrepressible.

During the last administration of Gov. Barry the time seemed to have come for that peaceful and undisturbing revision of the fundamental law which is always provided for in the American Constitutions, and which enables new ideas to assert their supremacy without the revolutionary violence that might be a necessary concomitant in some other countries. The period was one of uneasiness and unrest the world over; the thrones of Europe were shaking, and the people, with arms in their hands and behind barricades, were demanding the abolition of oppressive special privileges, and for themselves a larger share in the government. America escaped the calamities of insurrection and civil war, and the radical wave which swept across both continents spent its force here upon constitutional changes which brought the agencies of

government more directly within the reach of the popular voice, and made, in some important particulars, a better adjustment of individual rights. A notable change in Michigan was the requirement that judicial officers and the heads of executive departments should be chosen by popular election. In an entire revision of the State Constitution, made in 1850, we find checks upon over-legislation in the provision for biennial sessions of the Legislature, and in the limitations imposed upon the enactment of private, special and local laws. Exemptions of property from forced sale for debts were largely increased, and married women were relieved from the harsh rules of the common law which gave their property to their husbands. Very low salaries were prescribed for all State officers, that of the Governor being one thousand dollars only. The possible consequences of corporate aggrandisement were aimed at in a provision requiring all corporations to be formed under general laws which were to be always subject to alteration or repeal. Banking laws must be approved by popular vote, and the State was prohibited from engaging in internal improvements, or taking part with or loaning its credit to any person, association or corporation. These last are significant provisions, born of the great revulsion, but as wise in policy as they were noticeable in origin.

The succession of the executive office fell in 1851 to Robert McClelland, for a term shortened to one year in the change of constitutions. Gov. McClelland was a native of Pennsylvania, but had emigrated to Michigan before it became a State, and had served for three terms in the popular branch of Congress, where he had made for himself a national reputation. He was re-elected Governor in 1852, but resigned to become Secretary of the Interior, and was succeeded by Lieut.-Governor Andrew Parsons. Charles E. Stuart, who had also served with credit in the lower house of Congress, was now advanced to the Senate, to fill a vacancy caused by the resignation of Senator Felch, who had accepted a federal appointment.

The great anti-slavery uprising which followed the passage of the Kansas-Nebraska bill had the same disrupting effect upon political parties in Michigan as elsewhere, and the Free Soil party now almost wholly absorbed the Whigs, and had sufficient reinforcement from the Democratic party to enable it to take control of the State. Kinsley S. Bingham, who had served two

terms in Congress and made a good record, led the Democratic contingent into the Free Soil ranks. He was a native of New York, a farmer by occupation ; had been in Michigan since 1833, and was now elected Governor as the candidate of the new party. He was a man of good but not showy abilities ; made a good record as Governor, and was re-elected in 1856. At the end of his second term he was chosen Senator in Congress to succeed Charles E. Stuart. Gov. Cass continued in that body until 1857, when he became Secretary of State under President Buchanan, and was succeeded in the Senate by Zachariah Chandler. Of this gentleman it may safely be said that from the time of his election to the Senate he was the most notable man of his party in the State ; that he soon became prominent in national politics, and that his influence with his party associates grew from year to year to the day of his death.

Mr. Chandler was a merchant of Detroit, and like his predecessor, a native of New Hampshire. He had strong native sense, easily adapted himself to all classes of men and all grades of society, was quick in decision, fearless in action, uncompromising in principle and inflexible in purpose. These are the characteristics which make one a natural leader of men ; and Mr. Chandler by mere force of will commonly carried the doubting and hesitating among his associates along with him. He was less learned, courtly and polished than his predecessor ; he knew much less of literature and history, of foreign countries and our relations with them ; but he resembled Gov. Cass in integrity and thrift, while in his nature he was far more combative and persistent. When the time came for the great life and death struggle of the nation, no defiance rang out clearer and stronger ; no courage was less doubtful of results ; no vote was more unhesitatingly or more emphatically given for radical measures than were those of Zachariah Chandler. For twelve years he spoke the voice of the State in the Senate, and on the main questions of the day his utterances were never of doubtful import. Gov. Bingham was his fitting colleague when the civil war began, but he died in 1861, and was succeeded by Jacob M. Howard, another man of strong and positive qualities, respected alike for his learning, for his great natural parts, and for his integrity and fearlessness, who immediately took good rank in the Senate, where he commanded general respect.

Gov. Bingham was succeeded as executive by Moses Wisner, and he after two years by Austin Blair. Both these gentlemen were natives of New York, and both were inflexible in devotion to an undivided country. When war broke out Gov. Wisner entered the army at the head of a regiment and great expectations followed him to his new field, but he fell a victim to disease before there had been opportunity to give proof of military ability. His successor is happily still with us, performing with undiminished strength such public duties as are assigned him, and therefore with record still incomplete; but we may safely say of his administration that it was made notable by the refusal to join in compromising the dignity of the country and the constitutional rights of the people in order to win back seceding States, and by the vigor and fidelity with which the State, while the war lasted, performed all national duties.

When the war broke out Michigan was found to be loyal to the core. All parties as by instinct perceived that a great struggle was upon us, which was to put to final test the institutions of our fathers, and to determine for all time whether we were henceforth to be one of many, under a living constitution, or to be many and not one under a disrupted and despised compact. The alternative admitted of no hesitation, and reason not less than sentiment responded to the summons of the Union, and responded again and again as the need increased in urgency. Nor in this did Gov. Cass, though fresh from associations which had tainted some others, waiver or hesitate. He had lost his youthful fire and vigor when the war began, and no doubt felt much of that despondency which is a common accompaniment of great age in times of public danger and perplexity; but when he thought the time had come that he could no longer serve his country in the cabinet, he withdrew to come back to the scenes of his early labors and successes, and there with his old neighbors and constituents assembled about him, urged firm adherence to the cause of their common country, and gave his last public utterance for an indissoluble Union of indestructible States.

The deeds of Michigan's honored sons are resplendent in the history of the great civil war. How honorable was the part which Israel B. Richardson, Alpheus S. Williams, and others like them, now gone from among us, took in the great constitutional debate when cannon answered cannon in the argument! And that

mighty man of war, George A. Custer, a lion in battle and a child by the fireside; how the mountain passes of Virginia thundered beneath the tramp of his horsemen as he hurled them upon the enemy, striking never a light or dallying blow, and winning never a barren victory. But Custer, too, is laid to rest

“ With all his country’s wishes blest,
But not until the battle storm had passed away
With its spent thunders at the break of day.”

Leaving

“ A greener earth and fairer sky behind,
Blown crystal-clear by Freedom’s northern wind.”

And what need we say of the four years’ trial of the Constitution in the civil war? Only this: The bands of Union which some feared and many hoped were but withes of straw proved to be bands of iron, so entwined with the affections of the people as to bid defiance to assaults from any quarter. The idea that with many people has been almost a maxim—that it is impossible to support republican institutions in large countries, has been shown to be utterly baseless. Other nations recognize the cogency of the proofs; in Great Britain the monarchy has become little more than a name; France at last seems securely republican, and, excepting Russia and Turkey, every nation in Europe has been quickened to higher life by American example, and either secured representative institutions or perfected such as it had before.

Proceeding with the regular current of events, the organization of an independent Supreme Court a little before the war should be mentioned. Of the justices of this court Isaac P. Christiancy and James V. Campbell remained long enough on the bench to make for themselves great names in legal circles, as did also Benjamin F. Graves, who in 1868 became their fitting associate.

The successor of Gov. Blair was Henry H. Crapo, a native of Massachusetts, who was recommended to the people by his eminent business ability which had been exhibited in many different vocations and with unvarying success. He was once re-elected, and is remembered as an able, careful and prudent executive. During his term the fever of voting municipal aid to railroads was afflicting the country, and he strove, but without success, to stay its progress in this State. This method of making use of municipal credit and resources was, however, brought to a stop by a

decision of the Supreme Court before the evils had become very serious.

The successor of Gov. Crapo was Henry P. Baldwin, a native of Rhode Island, who for many years had been extensively engaged in business in Detroit as merchant, manufacturer and banker, and had won an enviable reputation for ability, integrity and liberality. He held the office for two terms, retiring at the beginning of 1873. Succeeding him for two terms was John J. Bagley, a native of New York. In him the State had for executive, one of those strong and vigorous characters who, by their native sense, business tact and ability, and promptitude in the performance of duty, do honor to the commonwealth with which they unite their fortunes. Many such have made their homes in Michigan, but none more worthy of honorable mention than John J. Bagley. He began life without means, and with but slight educational advantages, but he was full of energy and was prosperous in business from the first, his stores of useful information kept pace with his other acquisitions, so that when he was called to the office of Governor, his fitness for the place was universally recognized, and his administration was able, popular and wise. He was a man of large heart and of strong domestic and social ties; he was proud of his State and city, and he felt every inch the Governor when he had occasion to be their representative abroad, and to speak as he delighted to do, in their praise.

The gentlemen who have held the office of Governor since the time of Gov. Bagley are fortunately all still among us, and we meet them in social and business circles where their ability and worth make them prominent and respected. Charles M. Croswell held the office from 1877 to 1881; David H. Jerome, from 1881 to 1883; Josiah W. Begole, from 1883 to 1885, and the latter then gave place to Russell A. Alger, who as the present executive has so worthily addressed assembled thousands to-day. Each of these gentlemen as a private citizen was known and respected for the energy, prudence and success with which he managed his own business interests, and the people expected from each an administration of public affairs which should be prudent, conscientious and watchful, and in no instance were the expectations disappointed. Governors Croswell and Begole were natives of New York, and Gov. Alger, of Ohio. To Gov. Jerome belongs the proud distinction of being the first Governor of Michigan, who was born within its

limits; the true representative of those who were reared among its stumps and taught in its district schools. Good rearing and good teaching that must have been that gave a product so sturdy, vigorous and self-reliant; so well calculated by energy and persistence to hew an open road to public respect and to fortune.

The succession in the Federal Senate was kept up by the election of Thomas W. Ferry to succeed Jacob M. Howard in 1871, and and of Isaac P. Christiancy to succeed Zachariah Chandler in 1875. Judge Christiancy did not serve out his term, but resigned to accept the appointment of Minister to Peru, and Henry P. Baldwin succeeded him for a time under executive appointment until the election by the Legislature of Omar D. Conger, who is still in office. Ferry was once re-elected, and was succeeded by Thomas W. Palmer in 1883. All these gentlemen are still with us, and still making history, and we leave them to the future chronicler.

Of the men who served the State faithfully in the lower house of Congress and whose records have been sealed by death, a few have already been mentioned. It would be pleasing if time permitted to name all the others in succession; but the list is long, and at best we could only pass through it, and place a laurel here and there upon a worthy brow. And among the worthy was William A. Howard, a man of strong and positive qualities, who represented the First district from 1855 to 1861. He took high rank in Congress and had a place on most important committees. One of these was the special committee created for the investigation of the inroads into Kansas by armed bands from the border States. The country was then excited beyond all former precedent by what seemed to be the approaching culmination of the struggle over slavery, and already from State to State leaped the live thunder of the coming tempest. The committee in an elaborate report put plainly before the people a mass of startling facts, constituting one of the most important historical documents of the period. Mr. Howard was also one of the committee of thirty-three appointed to consider and report upon the subject of further national compromises; but his principles forbade his assenting to take even the shortest step backward, and he performed effective service in defeating the purpose for which the committee was created. Men doubted at the time whether this was best, but few doubt now.

Another worthy name is that of Fernando C. Beaman, who

entered Congress in 1861, and had the rare fortune, unequalled in the State except in the cases of Jay A. Hubbell and Omar D. Conger, of serving for five successive terms. He was a modest man, and became less prominent in Congress than many others who were neither so able nor so useful. Fidelity to duty was to him the mainspring of public action; and when he was offered the appointment of Senator on the resignation of Senator Christiancy, he declined, because his health was then failing, and he could not in conscience accept an office to whose responsibilities he felt himself physically inadequate. Charles Upson, also, who served for three terms, beginning in 1863, was a man of ability and sterling worth, and the career of a frank, manly, upright, honorable and useful citizen was closed when he passed away, having served the State in many important offices.

It is pleasing also, as we pass along, to note some federal appointments made in evident recognition of the truth that the office should seek the man and not the man the office. Such was the appointment of President Angell of the University to conduct an important and delicate negotiation with China; a deserved compliment to the profession of which he is so distinguished a member, and which in China is particularly respected and esteemed. It was a graceful return which the Flowery Kingdom made to the State when it bestowed upon the University its excellent display of Chinese productions which at New Orleans had excited so greatly the interest of all visitors. And eminently worthy also was the selection of Geo. V. N. Lothrop, the distinguished leader of the bar of the State, for the important post of Minister to Russia. When the national executive so emphatically makes fitness the test in his selections the people are not likely to overlook or even in thought to underrate the fundamental maxim that public office is a public trust.

But while thus mentioning a few of the many worthy men who have filled with credit important offices, we are reminded continually that many of the most notable and useful of the citizens of the State have seldom or never held public office. They have been active and served the public well in their several callings and set worthy examples; but for various reasons not personally discreditable have lived and died private citizens. They may not be less entitled to public honor for that reason. The best of worth is not in holding office, but in showing by an intelligent

performance of duty everywhere a fitness to hold it. A State's choicest possessions are its men of broad and vigorous minds, pure character, and noble aspirations, whether they serve the public in high station or low, as cultivators of the soil, in the profession or in handieraft employments. Such men inspire and elevate all who come within the sphere of their influence; they give the State respect and standing abroad; they strengthen it in the esteem and regard of the whole body of its people, and they create among its youth an emulation in excellence which is better for them and for the State than any reaching after mere personal distinction of wealth or office. Nor does the public spirited citizen fail to find that in private life he is charged with public duties which in their performance may be made of the highest utility; and while he performs these faithfully, he knows he stands not merely at the post of duty but at the post of honor. The trappings of office are mere tinsel, but commanding worth, as Emerson has so well said, "must sit crowned in all companies."

Thus, in the compass of an hour, have we attempted to summarise the leading events in State history. As thus presented the history seems tame and commonplace as compared with what during the same period has been taking place in other countries. No battle has been fought on our soil, no violent revolution has occurred in government, the steady pulse of industry has not been disturbed by the near approach of any alarming danger. There have been local calamities and disorders, but not once in all the period of State existence has anything occurred so strange and remarkable as to fix upon it the anxious eyes of the world. But yet—and largely because of this very fact—how mighty have been the changes! The State which fifty years ago was knocking at the door of the Union for the favor of admission, now numbers a population equal to that of all the American colonies at the time they first set British power at defiance in refusing to yield obedience to the Stamp Act. In fifty years the State has added to its population as much as the continent did in the first hundred and fifty years of colonization, and its growth in material wealth has been still more wonderful. This single fact is far more striking and significant and far more worthy the attention of statesman and historian than could possibly be the greatest of battles and the most brilliant of victories upon which nothing was depending but the gratification of individual or national ambition. Nor will

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the character of the population acquired suffer in comparison with that of any other country on the globe. The population is mixed as to nationality, with the Puritan blood predominating, but it is sufficiently homogeneous for all important purposes of the social state and of government. British America is largely and usefully represented, the Germans are planted on all sides, making intelligence and enterprise productive; all parts of the British Islands have furnished contingents, as has Holland also, and other European countries, but disturbing elements are few, and order, industry and thrift are everywhere. The educational system which the State so early established and so wisely nourished receives cordial support from adopted citizens, and it grows and prospers steadily and strongly, having, like the gentle showers of heaven, blessings for all. Rarely, in either public or social concerns, does nationality of birth determine the action of the individual. To the sober, industrious citizen of foreign birth, whether born in British allegiance, or in Scandinavia, or beyond the Rhine, or in that small country of great renown

“Where the broad ocean leans against the land,”

the home of nativity may always remain the home of sentiment, but the country of adoption will not for that reason be the less cherished; and common interests, common pursuits, common enjoyments and common aims and purposes must rapidly obliterate distinctions, leaving all proud that of right they are entitled in this beautiful and thrifty State to share the priceless benefits of American institutions.

And we may well take pride in our State, whether we contemplate it simply in its grand results, or examine it in comparison with other States. In the main its record is a clean one, bearing upon it few marks we should care to erase. After passing over the brief spendthrift days of its youth, we have only the unexciting story of how energy, enterprise, prudence and thrift may quietly and without the notice of the world build up a mighty State, with all the elements of strength and every promise of enduring prosperity. And were we to go back of the record to show who those were who were most active, efficient and able in State building, it would appear that for the most part they were men who began empty-handed but strong-hearted, and by mental and physical energy and force of character made for themselves a name while helping the State to greatness.

Michigan was the twenty-sixth State to take its place in the American Union, but it has been advancing steadily and with strong and even pace to the front, and to-day only eight are leading it in population and wealth. And while Michigan has been overtaking and passing so many of the older States, not one, new or old, has overtaken and securely held a position in advance of Michigan. Of the original thirteen, only New York, Pennsylvania and Massachusetts have now more people, and in a little time the proud old Bay State must content itself with a lower place. What more can be said in praise of the State than that it has more than kept pace with the astounding growth of the country, and more than kept good the wonderful promise of its earliest years? Justly and with the emphasis of proud satisfaction may its citizens exclaim as they welcome the stranger to our hospitable board to-day: *Si quæris amœnam peninsulam, circumspice*. Its beauties, its riches, its attractions are everywhere. But not in its growth, in its wealth, in its beauty, in its numbers, does the State chiefly pride itself as its religious and charitable institutions and its complete system of public education, and what the people have done and are doing through these and by these must sufficiently attest. First and foremost the aim of the State has always been to prepare its youth to act well their part in the great drama of life, and in the incidental trials and rivalries. If that aim is accomplished, the State may well be content, for material success will abundantly follow. However rich and diversified are the bounties of nature, "man is the nobler growth our realms supply," and the strength of the State must always be in the manhood of its people, who, if worthily trained, will make their own success in their chosen walks in life the glory of the commonwealth.

MR. CHAMBERLAIN :

There are present here to-day, a large number of persons whose forms are bent, and whose heads have become white; the pioneers of Michigan. Few of us can be expected to live in our loved Michigan many years longer; but there are many here who may hope to see the centennial year of the State of Michigan. If such there are, and they join in the celebration, they will not, as we do to-day, hear addresses delivered by one who has been a Chief

Justice, and one who now fills that office, both eminent as judges ; who have both written and published valuable histories of Michigan. I think no one will enjoy such a privilege again.

I present to you Chief Justice James V. Campbell.

JUDICIAL HISTORY OF MICHIGAN.

HON. JAMES V. CAMPBELL.

In the old world, and in most parts of the new, the judicial system and the matters with which it deals will be found to have been naturally developed from a historic past. The direct bearing of jurisprudence on the general progress and welfare, and the fact that its action is continuously recorded and kept in sight, render it a visible test and measure of public movement. No other records are so significant. In all civilized countries the rights and duties of citizens-in-law are substantially in accordance with usage and common understanding. Private and public action is continually brought to trial, and very few principles can be long lost sight of, or departed from, without quick detection. The history of law is the history of the Commonwealth.

But in this State of Michigan, whose corporate life has lasted but two score years and ten, so that many of us have seen and known it all, we do not look back to a long historic development. Our people, as their numbers have multiplied, are kindred in blood and ways to our neighbors in other States of this Union, and such adopted citizens as we have among us have also their counter-parts elsewhere. But looking back to our American antecedents, we find that the founders of this community did not come from Great Britain or any part of its dominions, and when the wilderness was first explored it was by another race, neighbors geographically, and long ago in part of common ancestry, but in the days when America was first colonized very far apart in all that determines the characters of commonwealths. The Norman stock that furnished the enterprising and uneasy blood that set men on both sides of the channel upon voyages and distant adventures had been losing political kinship ever since the Conquest. Equal in courage and personal enterprise, these neighboring peoples had drifted very far asunder in their habits of municipal conduct.

In Normandy there were frequent and fierce outbursts of popular hatred against centralized tyranny, but the tyranny remained. In

England the decisive triumph had been gained long since, and before the law, although the law was sometimes broken, there was general as well as personal freedom. When the British colonies were first settled the colonists were all English. There was no parliament of Great Britain and no legislative union of the island. They came over, bringing with them the permanent privileges of the common law of England, but leaving behind them a large part of its accidents and rules not fundamental. In those things which were not essential the different companies of adventurers, who were largely from cities, very generally adhered to their local usages, which were often far in advance of the common law of the rural parts of England, and much better suited to growing communities. Their land tenures, their recording laws, and many flexible and sensible business usages, came chiefly from the free cities, and not from the great lordships and manors.

In France, at that time, there was a much greater diversity of customs than in England. What remnant of popular freedom still survived was chiefly in the chartered municipalities which, like the cities of England, were always tenacious of such rights as they possessed. The southern part of the kingdom was known as the country of written law, and its towns and dependencies held on to the Roman law substantially as it was when they were Roman colonies, and before it became so thoroughly despotic in form as it came from the moulding of Justinian. The rest of the realm followed the customs developed from the various distinct races that had possessed its different regions, and the cities and communities of the north of France resembled in many ways their kindred in England. But throughout the entire territory of France there were certain rules in common, and these were chiefly feudal. And there were ordinances in force everywhere of royal origin.

There was no great charter to limit, and no free parliament to check the encroachments of prerogative, and the customs themselves, instead of being in force of common right, were held at the king's sufferance, so that this great variety was no sign of freedom. And when the French adventurers began their settlements in Acadia and Canada, followed not long after by the various New England and more southern English settlers, the two nationalities differed in the vital element of self-government. The Englishmen differed in their usages because they managed their

own affairs in their own way, so that actual uniformity was made impossible by the necessary variations of free agency. Their French neighbors had only such freedom of conduct as a monarch, jealous of his regalities, found it necessary to wink at in order to keep proud and spirited men from rebellion. But experience shows that liberty is only preserved by the actual conduct of affairs, and without that experience individual intelligence is powerless.

It was not the policy of the French authorities to extend civil settlements. West of Montreal there were but a few detached military posts, and those were not centres of population. In what is now Michigan, Michilimackinac and St. Joseph were the first military stations, and the former was the principal post. Some others were transient. No French people were allowed to become fixed residents of either. Detroit was the first, and during the French dominion the only, post intended to become a town, unless the seigneurie of Sault Ste Marie, granted in the latter days of that rule, can be classed with it. Detroit was established after a fierce contest with powerful adversaries, who were opposed to any new settlements as likely to cut off some of their profits from the western fur trade. As it was meant to have all essential advantages, and as courts of justice of some kind would seem necessary, we are led to consider what provision was made in that direction. Trade and mechanic arts came at once into existence in the town, and in a short time farms were granted and tilled and some industries were started.

Theoretically at that time the establishment of courts of original jurisdiction was one of the rights, if not one of the duties of feudal land-holders. In all the grants of seigneuries some power of this kind was given, and in a large portion of them it included jurisdiction over all subjects, civil and criminal, except a few political offences. The royal tribunals reserved chiefly appellate jurisdiction. But it is stated by the Canadian historians that there were economical reasons which led most of the seigneurs to abstain from setting up courts, and the people preferred to have their differences settled by some kind of arbitrators. Practically the only courts were created by the appointment of judges or commissaries by the Colonial authorities. The Intendant appears to have been at the head of the ordinary judicial system, and his delegates were probably the principal local judges, where they happened to be sent. In order to avoid confusion, the custom of the *Prévôté* and *Vicomté* of

Paris was adopted by the Crown as the rule of civil conduct, including contracts and estates. This was regarded among the writers on Customary Law as of high authority in construing doubtful questions, and by some it has been said—although questionably—that it might be looked to where other customs were silent. It was not confined to urban matters, although the antiquity of Paris made its usages valuable. The field of its jurisdiction included originally considerable territory, rural and agricultural, and it covered all sorts of interests. It was chiefly important here in fixing the amounts due for various charges on lands, multure and other feudal and proprietary dues, and the method of passing contracts and estates.

There is no record that has yet come to light which shows the early existence of any court in Detroit. There are several documents indicating for what purposes money was applied in public expenses, but none cover judicial charges. In the various acts of baptism, marriage, burial and the like, recorded in the parish books of Ste. Anne's church, which go back to 1703, the titles of all notables are carefully set out, but there is no sign of any civil magistrate residing in this region until Robert Navarre, Royal Notary and Sub-delegate of the Intendant, who came about 1730.

There is no reason to doubt that the Commandant for the time being exercised all powers necessary to enforce justice, either on the spot or by arresting and sending forward culprits to the lower Colony. In civil matters there could usually be very little occasion to litigate. There was generally some one acting as notary or performing analogous functions, whose action, although not judicial, was at least auxiliary. All land transactions, testamentary and estate matters, and many contracts, were had before notaries or persons acting in their stead, in so careful and permanent a way that there was no room for dispute about them. The functions were not entrusted to any but suitable persons, and all acts were publicly witnessed by witnesses of recognized standing.

From 1722, when Cadillac's rights were finally adjusted and surrendered, the Colonial Government seems to have taken more active charge than before, and endeavored to settle the claims of all private land-holders. In 1734 the previous grants were confirmed by new ones issuing directly from the royal authorities, and there are more obvious signs of regular government. Mr. Navarre, in his double character of Royal Notary and Sub-dele-

gate of the Intendant, was no doubt able to perform the judicial work required. But we have very little light on the subject, as the records have disappeared. It appears, however, that besides Mr. Navarre, there were some other gentlemen who must have held some kind of judicial office. Pierre St. Cosme is spoken of in the Pontiac Diary as former Judge, succeeded by Mr. LeGrand, and in documents much later St. Cosme is described in the same way, indicating that his office must have been of some importance. Both he and LeGrand were gentlemen of high social standing. There were several notaries.

After the English rule had been made permanent by the Treaty of 1763, justices of the peace were appointed quite early. They had not, however, any power to try cases great or small, and only acted as examining magistrates. The official correspondence contains many references to the lamentable want of tribunals capable of trying causes and redressing wrongs. The whole of Canada, except the lower Province, was intentionally exempted from any regular government, and was, until just before the American Revolution, not even nominally under civil rule. Such courts as were created were provisional and given a very limited jurisdiction. The local commander had the supreme local power, and frequently acted as judge and magistrate. The merchants formed arbitration boards of their own, which, while it lasted, disposed of all their mutual complaints. Generally all criminals charged with serious offences were sent below for trial, as was done with several American sympathisers during the Revolution; and while there were some cases in which extreme punishment was inflicted in Detroit, there is no question but that it was illegal. There are references in public documents showing that judges were appointed by the Colonial authorities for this region, but none ever came, so far as is known. Capital punishment was inflicted in three cases under sentences of Philip De Jean, a justice of the peace, who held also one of the provisional appointments for trying small civil cases. He left Detroit when Gov. Hamilton went on his unlucky expedition to Kaskaskia and Vincennes and was captured with that officer and held in close custody by the Virginia authorities for alleged inhumanity in the war. An indictment had been found against him below for the murder of the persons he had caused to be executed, and he was afraid to go beyond Hamilton's protection. The sale of his Detroit property

on the eve of his departure indicated that he did not mean to return. Several years after the Revolution it was recited in articles of apprenticeship of his son, a lad who was an infant when he left, that he had not returned since his departure in 1778.

The celebrated Quebec Act of 1774, which attached all the French cession north of the River Ohio to the Province of Quebec, declared that the custom of Paris should continue to prevail in civil matters and the English Law in criminal matters. But that act made no provision for the immediate organization of justice in the western posts, and nothing effectual was done to provide for it until 1788, five years after the close of the Revolution. At that time English speaking settlers had established themselves in several places in what is now Ontario, and their numbers were such as to require local organization. The Governor-General therefore divided this region into Districts, and as Detroit had been retained within British possession and the British authorities meant to keep it if they could, it was not only included within the district of Hesse, but made the seat of justice. William Dummer Powell was the first judge who presided over this court, and afterwards was the Chief Justice of Upper Canada. From this time on the courts sat regularly for all purposes and business was done in the ordinary course. Besides the District Courts, there were courts of common pleas and quarter sessions. The common pleas judges were all respectable lawyers, and the court was held in high esteem. Louis Beaufait was the first chief judge, and James May, Patrick McNiff, Charles Girardin and Nathaniel Williams were associates. All were old citizens familiar with French and English and allied by marriage or blood with the French inhabitants.

Immediately after the establishment of Upper Canada into a separate province, the name of the district was changed to the Western District, and Detroit was as before made the seat of justice, although a court was also appointed to be held at Michilimackinac. Things continued in this shape until June, 1796, the time provided for Jay's Treaty to become operative, when the British courts were removed to the other side of the river. Detroit was surrendered July 11, 1796.

Then for the first time the country came under the control of American institutions. Michigan formed a part of the Territory northwest of the Ohio, set apart under the celebrated ordinance

of 1787. By that ordinance, until the population became large enough to have a Legislature, the Governor and three Judges, all appointed by the President and Senate, were made a Legislative Board to adopt laws from the statutes of the various States as far as applicable. In selecting those laws attention was paid to substance rather than form, and parts of the statutes were amalgamated into new ones. Although this led to some criticism, it was within the spirit of the ordinance, and as Congress never disapproved of any territorial laws on that ground, and no court has ever held such action invalid for that reason, the practical construction of the powers of the Board has been in favor of their action.

The territorial authorities at once created a county, known as Wayne County, which included Northern Ohio, Indiana and Illinois and all of Michigan and Eastern Wisconsin, which contained settlements. The judicial system of the Northwest Territory became operative, and included the Supreme Court, Common Pleas, Probate and Orphans' Courts, and Quarter Sessions. Annual sessions of the Supreme Court were held at Detroit by one of the Territorial Judges. The Common Pleas Court and Quarter Sessions continued substantially as before, and with the same judges and justices, who also performed probate duties. Under all of the territorial systems, until the latter days of the Territory, all local officers were appointed by the Governor.

For several years population increased slowly. The earliest settlers included two lawyers, who became influential. Solomon Sibley and Elijah Brush were the earliest members of the Bar who came to Detroit. Both came directly from Ohio. Judge Sibley came from Marietta, where he had gone to join that settlement with several eminent soldiers of the Revolution, his wife, whom he married after moving to Detroit, being a daughter of Col. Ebenezer Sproat, and a granddaughter of Commodore Abraham Whipple, the first American who obtained naval success over British ships. Judge Sibley filled several public offices, having been elected a delegate to the Legislature of the Northwest Territory in 1799, and afterwards appointed to the Council. He was twice elected a delegate to Congress, and filled the office of Judge of the Supreme Court during the latter years of the Territory. He was one of the wisest and ablest men that ever lived in Michigan.

Col. Brush was Territorial Attorney General and Colonel of one of the regiments surrendered by Hull in 1812, and was one of the officers who proposed to deprive him of his command before he gave up the post. Col. Brush was banished by Gen. Proctor for remonstrating against his violation of the terms of the surrender, and returned with Gen. Harrison's army, but died shortly after the re-occupation.

The experience under the Northwest Territory was too short to leave any traces. In 1802 Michigan was made part of Indiana, with no material change of legislation. Only one term of the Supreme Court of that Territory was held in Detroit. In the early part of 1805, the Territory of Michigan was organized under a counterpart of the Ordinance of 1787, and for the first time we find a course of civil administration that left its mark on our subsequent career.

The Ordinance of 1787, having been made the basis of the territorial government, its legislature was in the first instance composed of the Governor and Judges, who selected and adapted laws from other States, and by degrees made up as full a code as the necessities of the people required.

It had always been a matter of difficulty to decide just when or how the legal and judicial system of Michigan became in accordance with the principles of the common law of England, instead of retaining some portion of the French law. No absolute answer can be given to this inquiry, but the reason why this cannot be given is because the change was not abrupt but gradual. The chief interests of the French people, especially after the English conquest, were connected with their landed estates. The best mechanics were French, down to a modern period, but questions arising out of their business were seldom litigated. After the English possession most of the active business was in the hands of traders who came from New York or Montreal, and whose antecedents were British. The currency recognized in this region was New York currency, of two dollars and a half to the pound of twenty shillings, and prices were fixed in accordance with those divisions until quite recently. The common-law rules of negotiable paper came in with the traders, and the British government business was all carried on upon a similar basis. The great bulk of litigation involved commercial matters, and so far as personal rights or crimes called for judicial action they were always after

1763 decided by English law. The French methods of dealing with lands had become quite analogous to our own. Although their transactions were had before notaries, it was very common, and latterly universal, to have the original deed (*acte in brevet, i. e.* letters overt), signed by parties, witnesses and notary, either executed in duplicate, or delivered to the grantee. English officials naturally found it easier to conform to their own familiar methods. The English courts, when organized, adopted all the common-law officers and formalities. When Upper Canada was established the English law was formally recognized, and although the British occupation after the treaty of peace is only regarded by our jurisprudence as provisional, and the statutes passed between the Revolution and our possession were not considered binding on the Territory, nevertheless acts done under them have been held valid, and the usages which grew up rendered it much easier to go on in the same way than to attempt theoretical changes. The Ordinance of 1787 itself created rules of inheritance, and laws for making and recording deeds and wills; and while saving their old usages to the settlers at Kaskaskia, Vincennes, and other places which had come within the actual control of Virginia, no such exemption was made as to any part of Michigan. The courts had their jurisdiction directly measured by the common law. Habeas corpus, trial by jury, and judicial proceedings according to the course of the common law, were made perpetual rights under the six articles of compact. The power of the Governor and Judges to select statutes was confined to the American States, all of which followed the common law.

It is safe to say, therefore, that when Michigan became a Territory, it was already in all essential features a common-law region. The courts assumed it, and that assumption has been continued and universal. The traditions indicate that while some of the ancient inhabitants now and then sighed for the old ways of justice, it was not for the jurisdiction of French tribunals acting under the custom of Paris, but for the arbitrary and summary procedure of the commanding officers, who applied military methods to the enforcement of contracts and the redress of wrongs, with more respect to natural justice than to law. It took the French inhabitants a long time to understand what they called Yankee ways, although they had no great love for Great Britain.

The want of knowledge concerning the precise condition of the

French and English land titles led to the judicious determination of Congress to require all claims to be brought forward before commissioners, and to confirm not merely perfect paper titles, but all rights manifested by possession. Having in this way provided for muniments of title derived in all cases from the United States, the courts were delivered from inquiring into feudal and unfamiliar rules and burdens, and all estates became complete allodial titles. To complete the work the Governor and Judges put an end to any further groping in the dark by formally repealing all remnants of the French law, and of the outside legislation by England, Canada, or the Northwest and Indiana Territories. This left no statutes in force but acts of Congress and of Michigan Territory.

The Supreme Court was the only one directly created by the territorial Organic Law. The laws adopted by the Governor and Judges gave to justices of the peace power to try small civil cases and to District Courts general jurisdiction up to \$200, afterwards enlarged to \$500, with appellate authority in the Supreme Court which had the remaining jurisdiction at law and in equity. Probate and other proceedings outside of the ordinary judicial power were also transacted in the general courts till Probate Courts were created. The Territory was not divided into counties and townships until quite late in its history. Four districts were created, Erie, Detroit, Huron and Michilimackinac, and courts held which were at first presided over by a Judge of the Territory, and afterwards by lay judges, a chief and two associates. There were no elected officers, and no small territorial divisions except highway districts. All process originally issued to the Territorial Marshals. Except at Mackinaw, all the settlements were along the water from the St. Clair River to Ohio. As the whole territory fell within the old County of Wayne, that necessarily became dormant, and in process of time its rights in action were vested in the Territory. In 1810 the District Courts were abolished and their jurisdiction divided between the Supreme Court and justices of the peace.

This condition continued until after the war, and no steps were taken during Governor Hull's administration to bring about any local self-government. Detroit was incorporated before the creation of Michigan Territory. Michilimackinac, the next borough organized, was established as a borough in 1817. Detroit was made a city in 1806. In 1809 an omnibus-repealing statute

apparently included the charter, but whether lawfully or not is doubtful. By an act of 1810 all of the acts of the Governor and Judges passed between June 2, 1807, and September 10, 1810, were repealed, as well as the Indiana and Northwest Territorial laws. In 1815 a new charter was given to Detroit, and the old repealing laws, so far as they were supposed to affect its original corporate existence, were themselves repealed. There is some mystery about all this legislation and counter legislation. The city seems to have continued throughout to act as such, and it had been recognized and provided for by act of Congress as the seat of government, and special Congressional interference led to having it laid out anew after its destruction in 1805. The conflicting action of the governing board can only be accounted for as a part of that disgraceful bickering which induced each faction, when in a majority, to undo the work of its adversaries.

The personal character and antecedents of the early territorial judges have been made so familiar by many writers that none but a brief sketch would be justifiable.

The first appointments made were confirmed March 1, 1805, and included Samuel Huntington of Ohio, Frederick Bates of Michigan, and Augustus Brevoort Woodward of the District of Columbia. The act of Congress made no provision concerning precedence, but the territorial board enacted that the judge having the earliest commission should always preside. Judge Huntington did not accept the appointment. On the 23d of December John Griffin, one of the judges of Indiana was, at his own request, as stated by Mr. Jefferson, nominated as judge. The Senate seem to have found some difficulty in agreeing to the confirmation as it was considered and postponed several times, but he was at last confirmed March 29, 1806.

Although Judge Bates was named before him in the appointment and confirmation of the territorial judges, Judge Woodward assumed to act as Chief Justice, but how his precedence was obtained does not appear. Possibly his commission may have issued first. Judge Griffin and Judge Woodward made common cause from the first, and Judge Griffin quarreled with Judge Bates so that the latter resigned his office, and was subsequently made Secretary of Louisiana Territory where his career was useful and eminent.

Some difficulty was experienced in filling his place. In Febru-

ary, 1807, John Coburn of Kentucky was nominated and confirmed, but never accepted the office, and in the following November was nominated and confirmed as a judge in Louisiana. At the same time Return Jonathan Meigs, Jr., was nominated for Michigan. The President had appointed him during the recess of the Senate, but he never sat in court. The nomination was rejected. The reasons do not appear, but the Senate directed their action on this and previous nominations of the same gentleman to be transmitted to the Governor of Ohio,—a proceeding not usual and unexplained.

It was not until April, 1808, that a further nomination was made of James Witherell who was confirmed without difficulty. Governor Hull's re-nomination at the same session led to a long investigation during which various calls made on the President and Secretary of War for the communication of papers and information were fully responded to, and at last he was confirmed by a ye and nay vote of 18 to 10. One chief ground of objection which turned out to be unfounded, was a charge that he had used bills of the Bank of Detroit to pay public dues after it had been abolished by act of Congress. In this matter Judge Woodward, who was the president of the bank, was the chief offender, and one of the hottest conflicts that arose between him and Gov. Hull grew out of an act to punish the circulation of illegal bank bills, adopted in his absence by Gov. Hull and Judge Witherell against the opposition of Judge Griffin. On the 16th of September, 1810, Woodward and Griffin being in a majority, by reason of Judge Witherell's absence, adopted a law repealing all acts passed between June 2, 1807 and September 1, 1810, which included the obnoxious acts passed during Woodward's absence. In the controversies several criminal prosecutions arose out of assaults upon and by friends of the disputants, and grand juries under prompting undertook at various times to present legislation as a nuisance and to find presentments against both Governor Hull and the Chief Justice, all of which were of course of no legal account. On September 22, 1810, the grand jury having made some presentments of persons not named in the court records, the Chief Justice, in spite of the law forbidding their disclosure of the action in their consulting room, actually polled them and required each to answer whether he voted for the presentment. It is hard to conceive a more audacious violation of law.

So long as Governor Hull's administration continued, this

unseemly controversy was kept up and entered into the court as well as the Legislature. Judge Witherell was the only one who retained public respect. He and Woodward were personally hostile. If it had not been for Woodward's services to the citizens of the Territory during the war, he would probably have been impeached. Hull's demerits and Woodward's good conduct then removed much bitterness, and under Gen. Cass' administration no demonstrations were made which produced general discord, although the court was not harmonious.

During the period before the war the court had to pass upon some important questions, and displayed learning and ability. The position of slaves held before Jay's Treaty within the Territory was decided to be the same as before, and several such persons were remanded to their masters, but procured freedom by crossing into Canada, whence they subsequently returned and were not molested. But it was held that Canadian slaves coming into Michigan could not be delivered up. Cases also arose under the non-intercourse or embargo acts, and property imported at Mackinaw was seized and forfeited. The court was also on one occasion called on by the State Department to make inquiries into the tarring and feathering of an obnoxious person who came into the Territory from Canada to seize runaway slaves. The case does not seem to have become a *casus belli*. There was one class of cases where the records appear very discreditably. Several British officers aided by some Americans kidnapped a deserter from Canada by armed force and under very aggravated circumstances, and on conviction were heavily sentenced. Upon Judge Griffin's taking his seat, presumably by the majority thus created over Judge Bates, all of these sentences were made nominal and reduced to fines of a few cents.

The periods before and after the war of 1812 were so different in the general current of affairs as to have very little resemblance. General Cass was disposed as far as possible to Americanize our methods, and open the way to local institutions. Changes were also made in the judicial system. The original jurisdiction of the Supreme Court was confined to cases involving more than \$1,000, except in ejectment. County courts were established having original jurisdiction (except in ejectment) in all cases not exceeding \$1,000, and not cognizable by justices. Until the Territory should contain more than one county, the County

Court was to be held in Detroit, the old District Court continuing at Michilimackinac, but nowhere else. Judges of the County courts consisted of one Chief and two Associate Justices, who were usually (although not required to be) laymen, and who were invariably business men in whom the people had confidence. These courts, as long as they lasted, retained the public esteem. None of the judges was a non-resident when appointed, and all were familiar with the ways of their fellow-citizens. Their judgments, although open to appeal, were generally acquiesced in. Few courts have ever had men of higher character or wiser discretion than the Territorial County Judges. Sheriffs, coroners and constables were provided for in each county as it should be established. These officers were all appointed by the Governor. Michilimackinac and Prairie des Chiens were made corporate boroughs in 1817 and 1821 with all ordinary municipal powers in the hands of the citizens. Imprisonment for debt was made less rigorous, and the prison limits were made coincident with the county. Monroe county was established by the Governor July 14, 1817, shortly before the expected visit of President Monroe, who came to Detroit in August. Wayne county had been re-established November 1, 1815. Macomb county was set apart January 15, 1818, Michilimackinac October 26, 1818, Oakland January 12, 1819, St. Clair March 28, 1820, and Lapeer, Sanilac, Saginaw, Shiawassee, Washtenaw and Lenawee were defined but not organized September 10, 1822. The present State of Wisconsin was organized into Brown and Crawford counties on the same day that Michilimackinac county was created. All county officers were appointed.

In 1817, a Court of Quarter Sessions was created for purely administrative purposes, composed of the County Judges and Justices of the Peace. They were to transact the county business and see to the assessments and raising of taxes. They were also required to divide their counties into townships and report their action to the Governor, who only could actually make the division operative. The first townships were established in Wayne county in pursuance of such recommendations January 5, 1818. On the same day Gov. Cass ordered an election to determine whether the inhabitants of the Territory desired to have a Territorial Legislature, such as they were entitled to under the Ordinance of 1787. The people decided by a decisive majority against assuming the responsibilities of self-government.

County Commissioners appointed by the Governor afterwards superseded the Quarter Sessions.

In 1823 a radical change was made in territorial affairs. Congress decided for the people, who would not choose for themselves, that there should be a Territorial Legislature, differing from that contemplated by the Ordinance, but intended to prepare for it. Eighteen persons were to be elected, of whom nine should be designated by the President, with the consent of the Senate, to form a Legislative Council, with general powers, and with power to submit to the people whether they would have a general assembly of two houses, such as the Ordinance contemplated. The law of 1823 provided that thereafter the Territorial Judges should be appointed for four years instead of during good behavior, and that the existing judges should go out of office in February, 1824. An act of Congress of 1825, empowered the Legislative Council to divide the Territory into townships and allow them to elect their own officers. It also provided for electing all county officers except judges, justices of the peace, clerks and sheriffs. All officers not elective or appointed by the President were to be appointed by the Governor and Council. The numbers of the Council were enlarged to thirteen. In 1827 the people were allowed to elect their own Council without the intervention of the President and Senate. This completed the territorial organization, as the people never adopted the legislative system which they were empowered to do under the Ordinance of 1787.

There is no doubt that the judges were legislated out of office because they had become intolerable to the people. Judge Witherell was the only one reappointed. Judge Woodward was made Territorial Judge in Florida. Judge Griffin left the Territory.

The upper country being difficult of access, and the region west of Lake Michigan having been attached to the Territory, provision was made January 30, 1823, whereby a judge should be appointed by the United States to hold a court of original jurisdiction such as was exercised by both Supreme and County Courts in Michilimackinac, Brown and Crawford counties, with appeal to the Supreme Court. The original jurisdiction of all the other courts there was superseded. James Duane Doty, a gentleman distinguished since in public life, was made such judge, and held office so long as the Territory existed. In the same year, 1823,

the building of a Court House was begun in Detroit, under the Congressional appropriation of lands near Detroit. This house was built by Thomas Palmer, father of our present Senator, who took the appropriated lands in payment. The building was used by the Territory as a Court House and Council Chamber, and by the State, without any apparent authority, as a Capitol, to the exclusion of the courts. After the Capitol was fixed at Lansing it was used for school purposes, with the authority finally secured of the United States, the State and the city of Detroit. The first union school in the State was held there and it afterwards became the site of the Detroit High School.

The Supreme Court under the Congressional revision of the territorial system was for the first time made subject to appellate action by the Supreme Court of the United States. It consisted of James Witherell, Solomon Sibley and John Hunt, all, with James Duane Doty, appointed January 19 and confirmed January 21, 1824, and all residents of the Territory. Judge Hunt died before his term expired, and Henry Chipman was appointed in his place, and was confirmed December 27, 1827. On the 7th day of January, 1828, Judge Sibley was re-nominated and William Woodbridge, who had been Territorial Secretary, was nominated to succeed Judge Witherell, who took his place as Secretary. All were confirmed.

In 1832 Judge Sibley continued in office by re-appointment, and George Morell, of New York, and Ross Wilkins, of Pennsylvania, neither of whom had ever been in Michigan, were appointed and confirmed as successors of Judges Chipman and Woodbridge. The court continued to consist of Judges Sibley, Morell and Wilkins when the State was organized. All of the judges who were in office after 1824 were sound lawyers and able magistrates, and have left behind them honorable memories and a system which was largely their work.

By a law of 1827, passed April 13, Circuit Courts were created with appellate jurisdiction over County Courts, and concurrent original jurisdiction with them up to \$1,000, and exclusive beyond it, in cases of common law. Both courts had criminal jurisdiction. A Judge of the Supreme Court held the Circuit Court of each county. April 15, 1833, a new system of Circuit Courts was created. All the counties east of Lake Michigan but Wayne county were to be one circuit. A Circuit Judge, who must be a

lawyer, was to preside throughout the circuit in each county, and two associate judges in each county, who might be laymen, were to hold the Circuit Court for their counties with the Circuit Judge. Any two might act, except on trials of felony, when the Circuit Judge must be present. These courts had equity as well as law powers, and general original jurisdiction, the County Courts being abolished. The old Circuit Courts presided over by Supreme Court Judges were retained and called Superior Circuit Courts, with appellate jurisdiction over the new ones. At the same session a full statute was passed giving chancery powers to the Supreme and Circuit Courts, and making a very complete and thorough system of procedure which was the basis of our subsequent legislation on chancery procedure. It was prepared, as it is understood, under the direction of Elon Farnsworth, the subsequent Chancellor. Provision was also made then and subsequently for fixing the county seats of the annexed country east and west of the Mississippi. Wayne and Brown counties retained their County Courts as well as their Circuit Courts. In January, 1835, the office of the Register of Probate, who had been not only vested with some probate jurisdiction, but also with the duty of recording deeds, was abolished, and his powers were divided between Judges of Probate and County Registers.

On the 12th of February, 1835, a very severe criminal act was passed to punish the exercise of any foreign jurisdiction within the Territory. This was the beginning of the active measures to exclude encroachments on our southern boundary.

No further changes were made in the judicial system of the Territory.

On the 26th day of January, 1835, an act was passed to enable the people of Michigan to form a constitution and State government. Referring to the Ordinance of 1787 and subsequent legislation fixing the boundaries of the State to be erected, and authorizing its admission when having a population of sixty thousand free inhabitants, this statute recited that by legislative authority it had been ascertained that there were 87,273 free inhabitants within those limits. It then provided that the free white male inhabitants over twenty-one years old within those limits should elect delegates to a convention to meet at Detroit on the second Monday of May. On the 27th of March provision was made that any citizens ordered into military service might vote in any district where they should be.

This convention met May 11, and on June 29 finished its work by adopting a constitution which was to be voted on upon the first Monday of October, 1835. At the same election a Governor, Lieutenant-Governor, members of the State Legislature and Representative in Congress were to be elected. In case the constitution should be adopted, the Legislature was to meet on the first Monday of November.

The judicial system of the Territory was to remain in force until superseded by State legislation.

The Constitution was adopted. Stevens T. Mason was elected Governor, and Edmund Mundy, Lieutenant-Governor. Isaac E. Crary was elected Representative in Congress for the State. The Legislature met on the appointed day, and on the 10th of November, 1835, passed a resolution for the election of Senators. Lucius Lyon and John Norvell were elected, Mr. Lyon by both houses, and Mr. Norvell by majority in joint convention. The Senate was Whig, and the House Democratic. Major John Biddle, who was President of the Convention, had a majority of four in the Senate, and Mr. Norvell a majority of seven in the House.

After some necessary financial legislation the Legislature adjourned until February, 1836. Laws were passed at the extra session to organize the Supreme and Circuit courts, and a court of Chancery, to come into existence after July 4, 1836, when the jurisdiction of the territorial courts was to cease.

When the Constitution of 1835 was adopted, the Territory of Michigan had received so large an increase of population from other parts of the United States that the whole public system had become orderly and adapted to all conditions of local self-government. Counties, townships, road and school districts, and all the the judicial machinery corresponded substantially with what might be found in New York or New England. In the main things had been patterned after New York, from which the largest immigration had come. But the territorial officers were always inclined to perpetuate their own early institutions, and as they were of various origins, the result naturally followed that there were some incongruities. New York and Massachusetts finally lent more than all the other States, and there are still easily detected systematic portions of legislation traced to those separate sources. Particular statutes were borrowed from all sources.

It became necessary at various times during the territorial period

to gather together the scattered laws, which had become confused by the careless methods of the first period of Governor and Judges, and still more so by the independent way in which Judge Woodward and his ally, Judge Griffin, disregarded all laws which they did not fancy. Between the organization of the Territory and the adoption of the State Constitution there were five different collections published, and of these none prior to 1827 was complete. In 1806 a collection was made, including thirty-four laws passed in 1805, which was accurate as far as it went, but which gave no light concerning the old laws in force. The condition of things was not very favorable for enabling the people to understand the laws. There were very few in the Territory who understood English. There were no newspapers and no other means of spreading intelligence. This volume was printed in Washington, and was not published until many more statutes had been adopted, some of which materially altered the former ones. Between this time and 1816 the changes became numerous, and the conflicts and inconsistencies very great. Of this new legislation much was never published at all, and remained unknown. Most of the acts were not brought to public knowledge for long periods, and many were repealed before any one ever heard of them. Eighty were never put in print, so far as known, until 1884, when they were published in a supplementary volume to the recent reprint of territorial statutes. Nothing but the healing power of time, and the operation of limitation laws, has prevented the ignorance of some of these enactments from working mischief.

In 1816 a synoptical arrangement of the substance of the laws supposed to be in force in that year was printed. Very few provisions were printed in full, and several statutes were not found.

In 1820 the condition of affairs was brought to the attention of Congress. That body appropriated twelve hundred and fifty dollars, and required all laws in force to be published together, under the supervision of the territorial authorities. At that time William Woodbridge was Secretary, afterwards Judge, Governor and State Senator. The result was a well edited compilation, then supposed to be complete, of existing laws, known as the Compilation of 1821. The Legislative Council, which held its first session in 1824, caused the session laws to be published regularly, but it was discovered that acts still existed which were not in print, or not known, and litigation frequently arose which brought out

surprises. To put an end to this mischief it was determined to supersede all the existing volumes by a new and complete revision.

On the 21st of April, 1825, a resolution was adopted appointing William Woodbridge, Abraham Edwards, John Stoekton, Wolcott Laurence and William A. Fletcher a commission to revise the laws. Asa M. Robinson was afterwards put in place of Mr. Woodbridge, who resigned. The resolution very carefully indicated what rules should govern the work, which were in substance these: All acts concerning the same subject were to be digested into one act. The commission was authorized to follow the principles of existing acts or to make such alterations and additions as should be deemed expedient. Unnecessary acts might be left out, and deficiencies supplied. The result was to be certified to the Legislature for consideration.

The commission prepared what is now known as the Revision of 1827, in which, while substantially conforming in most things to the old system, nearly all important measures were put in the shape of new, separate enactments, drawn with skill and leaving out very few things of consequence. It was enacted substantially as reported, and in order to prevent any further evils from ignorance, it was provided that all acts not therein specified should be repealed. The Territory thus had for the first time a complete code of all its existing laws. In 1833 a smaller compilation was published, including some later statutes and some reprints of older ones. Most of the legislation after 1827 was special, but some general laws were passed, the most important of which was a ten-years limitation law, applicable only to existing cases, and containing no saving clauses. The previous laws had failed to cover the whole ground, and antiquated land claims, with no particular equities, had been used in some cases for extortion.

The new Legislature went to work vigorously to complete the State organization. Although Congress kept the State waiting for recognition and admission to representation for more than a year the local government has always been recognized as beginning in the fall of 1835, and the whole machinery of general and local business was arranged by legislation adopted in the early part of 1836, or in 1835.

Provision was made for the appointment of all necessary public officers and the organization of courts, and all the business was to be transferred from the Territorial to the State courts after July

4, 1836, at which time, under the action of Congress, Wisconsin became a detached Territory. All the old courts were abolished. The Constitution made no direct requirement concerning any courts but the Supreme and Probate courts. It had provisions bearing upon County and Circuit courts if any should be established. Full order was given concerning Justices of the Peace. All county officers but Prosecuting Attorneys were made elective. These were appointed as State officers, and were evidently treated as representing State interests, and named with the Attorney General. All State officers and State judges were appointed by the Governor and Senate.

The courts of record which were provided for were the Supreme, Circuit and Probate Courts, with substantially the same powers as the old courts except in equity. A separate Court of Chancery was established, from which an appeal lay to the Supreme Court. Pending cases were transferred to the new courts. The judges and chancellor were appointed by the Governor and Senate for periods of seven years.

The first Supreme Court consisted of William A. Fletcher, Chief Justice, and George Morell and Epaphroditus Ransom, Associate Justices. Each was assigned to a circuit. Wayne, Macomb, St. Clair, Lapeer, Michilimackinac and Chippewa, with the country attached to each, formed the first circuit, presided over by Judge Morell. Monroe, Lenawee, Washtenaw, Oakland, Saginaw, Jackson and Hillsdale formed the second circuit, allotted to Chief Justice Fletcher. Judge Ransom held the courts in the third circuit, consisting of Branch, St. Joseph, Cass, Berrien, Kalamazoo, Allegan, Calhoun and Kent, with attached territory. One term of the Supreme Court was held annually in Wayne, Washtenaw, and Kalamazoo. Terms of the Circuit Courts were held once or more annually in each county. Two Associate Judges were elected in each county every four years to sit in the Circuit Court, but in case of their absence a judge of the Supreme Court could sit alone. These associates were not generally lawyers.

Judge Sibley for personal reasons did not desire an appointment to the State bench. He was a man of great ability and wisdom, and had universal confidence. He lived to advanced age. The Chief Justice was an old resident of the Territory who had held judicial office and had done most of the work of the compilation of 1827. Judge Morell had been nominated by President Jackson,

with Judge Williams, to succeed Judges Chipman and Woodbridge in 1832. He was a native of Berkshire county, Massachusetts, but received most of his legal training in New York, where he was a fellow student with Governor Marcy and Chancellor Walworth, and where he obtained a good reputation at the Bar and in various offices in public life. He was one of the most thoroughly trained common lawyers in the State, and transacted business with readiness and accuracy. His circuit was the most laborious of all, and his work was promptly and well done. Upon the resignation of Judge Fletcher in 1842 he was made Chief Justice for the remainder of his term. Judge Ransom came to Michigan not far from the time of the close of the territorial period, having been a successful practitioner in New England. At the close of his first term in 1843 he was made Chief Justice to succeed Judge Morell, and continued to fill the office until he became Governor January 1, 1843. He was much respected for ability and uprightness and exercised his judicial functions acceptably to the people and the Bar. He was a man of good common sense as well as legal sufficiency, and had great personal popularity.

Judge Wilkins was appointed District Judge of the United States for the District of Michigan several months in advance of the final admission of the State, and did not become a member of the State judiciary. He remained in office until 1870, when he retired on full pay, having reached and passed his three score years and ten, and having served thirty-eight years on the bench in Michigan. He was a member of the Constitutional Convention of 1835, and of the regularly elected convention which in 1836 rejected the proposition of Congress to give up the disputed territory to Ohio, in exchange for so much of the Upper Peninsula as was not within the State boundaries. He was also one of the persons who called shortly thereafter the irregular body known as the Frostbitten Convention, that undertook to accept the Congressional scheme on their own responsibility, and got the State into the Union through the back door. He took an interest in most public matters, and was a very useful regent of the university. In private life he was genial and humorous.

The first Chancellor, Elon Farnsworth, was admirably fitted for his office. He was a thorough scholar as well as lawyer, with cool judgment and an intuitive knowledge of men, and an enlight-

ened sense of justice. Under his careful administration the equity system became well adapted to the necessities of the community, and divested of unreasonable conditions and vexatious delay. Very few of his decrees were reversed, and still less ought to have been. He belonged to the same class of wise and sensible jurists as Chancellor Kent, whom in character and attainments he closely resembled. He gave up his office before his term expired and was succeeded by Randolph Manning, who himself resigned in 1846 upon the action of the Legislature looking to the abolition of the court, and Chancellor Farnsworth reluctantly accepted a re-appointment in the hope at the Bar that his popularity might induce the restoration of that tribunal. The tide, however, had set in another direction and could not be turned. Chancellor Manning was an able and upright judge, who had filled other offices usefully and made an excellent Chancellor. Unfortunately during his term there was great occasion for severity in dealing with a good many frauds and corporate insolvencies growing out of the general business disasters, and he became more or less obnoxious to some influential persons who opposed him strenuously. With all his firmness and positiveness he was a warm hearted and generous man, who was held in the strongest esteem by those who knew him best.

At the beginning of the State existence legal proceedings, although somewhat simplified, retained a great deal of unnecessary prolixity and technicality. The statutes of amendments were reasonably liberal, but special pleading still prevailed, and while notices might be used instead of pleas, the practice was so strict that very little was gained by it. Judge Morell and Chief Justice Fletcher were both thoroughly trained in legal dialectics, and opposed to any laxity in pleading or practice, having been educated where such things were regarded as of great importance. In the project of his Revision of 1838, Judge Fletcher seemed disposed to go back rather than to advance in liberality of practice. Judge Ransom, while careful in his practice, was much less inclined to excessive strictness. Fortunately it happened not long after the courts were organized that the English courts adopted a series of rules for the simplification of pleading and practice, that was found so great an improvement as to induce the best members of our Bar to urge their adoption here. The struggle was a sharp one, but liberality prevailed. The Revision

of 1838 made such provisions in regard to fees that it was an object for every practitioner to make his papers as prolix and his action as dilatory as possible. Declarations containing from fifty counts upward were not unknown, and as every folio added very considerably to the fee bill, it was not uncommon for some lawyers to make an effort to lengthen their papers as far as possible, and to use every opportunity to make motions and dilatory proceedings. In spite of this there were enough among the abler members of the Bar to push forward the measures of reform. In 1840 a statute was passed which reduced taxable costs to a dead level, and a very low one. This no doubt had some effect in helping on simplification, and the change went on steadily and intelligently, until it would be difficult to devise a system which reaches results as rapidly or as easily as our own.

One of the incidents of what have been called the flush times, was an idea that values might be created on paper out of very little material. Lands were bought at low prices and supposed by the process of platting to increase in value fifty or a hundred fold. Corporations were created for all manner of purposes, with no personal responsibility, and with capital fixed by inflated rates, Banks sprang up in every village and hamlet, and sometimes with no discoverable habitation. A neatly engraved bill, issued by a chartered corporation, was assumed to be good without inquiring into the character or standing of its originators. The abundance of this easily obtained wealth led to speculation and extravagance, and the facilities for obtaining credit gave many rogues a plausible footing. Naturally frauds multiplied. The Court of Chancery was crowded with litigation, and when the crash came, all the courts were overburdened.

One of the first things called to the attention of the Legislature by the Governor, was the importance of revising and consolidating the laws. On the 8th of March, 1836, an act was passed appointing William A. Fletcher, then a circuit judge and afterwards chief justice of the Supreme Court, to prepare, digest and arrange a code of laws for the government of this State, and that he report the result of his labors to the Legislature on the first Monday of January, 1837.

The report was not ready, and on the 21st of March, 1837, a further resolution was passed extending the time until the 9th of November, 1837, and authorizing him to report the laws digested

in the shape of separate bills. That was the course which he pursued in 1827, each subject being then dealt with by itself, and no arbitrary or other arrangement being made into chapters, books or titles. On the same day another resolution was passed requesting the Commissioner not to embody the principle of imprisonment for debt in the system of consolidated laws, but to provide for issuing summary process to commence suits, and speedy execution. In November, 1837, the Legislature met to consider the report of the Commissioner, and finally adopted his action with little modification and hardly any scrutiny.

The result was unfortunate. It was intended that no serious change should be made in the statutes. If this plan had been carried out no confusion would have arisen. But the reviser shaped matters very much to suit himself, and the fact that the chapters were first introduced separately prevented the Legislature from discovering all the changes and omissions. In some instances he directly disregarded positive instructions, and the deviation was not discovered till afterwards. He paid no attention—as they supposed he had attended—to the directions concerning imprisonment for debt, and the law as he reported it was as severe as ever. He restored the system of County Commissioners, who had been for ten years replaced by the Board of Supervisors. He made no provision whatever for the regulation of the State prison. He omitted the very necessary provisions for proceeding against corporations in chancery, and did not provide any statutory means, legal or equitable, for winding them up. The provisions for executing and recording deeds were left in great disorder. He omitted the old provisions for allowing notices instead of special pleas. Many omissions were afterwards discovered in the details of business in courts and elsewhere concerning testimony and other essentials, and the various officers and their powers auxiliary to judicial action. The non-imprisonment of debtors and the equitable control of failing corporations were at that time as important questions as any that could be found.

The haste with which this revision was prepared and adopted rendered it very unsatisfactory. It was ordered to go into effect August 1, 1838, and in the meantime it required arranging, printing and indexing. Before it was ready for the printer's hands some further changes and additions became necessary.

The previous revisions had been arranged in natural order by

subjects, and sometimes alphabetically. The arrangement of this code was left to the two commissioners appointed by the Governor. E. Burke Harrington and Elijah J. Roberts were selected for this purpose. Mr. Harrington was a lawyer who had before leaving New York been one of the compilers of an excellent chancery digest. He was the first State reporter of Michigan. Mr. Roberts was a gentleman of experience in journalism and an accomplished writer and editor. By reason of illness Mr. Roberts could do very little, and Mr. Harrington was obliged to complete the task nearly unaided, except more or less by the reviser. He brought to his task a profound admiration for the complicated divisions and sub-divisions of the New York revised statutes, and parcelled out the contents into parts, titles, chapters and sections, so that every citation had to be made with four references. To those unused to such a roundabout way of pointing out what was meant to be indicated, this was annoying and liable to lead to slips and blunders. When the book was out and distributed the legislative session of 1839 was near at hand, and before it met the defects of the new code were apparent to every one. The time of the Legislature was largely taken up that winter in rectifying the mistakes, supplying the deficiencies, and undoing the unwise provisions of the unfortunate code, so that the session laws of 1839 not only contained many detached amendatory acts, but also embody one very long omnibus act which referred to nearly all parts of the book as subject to modification. The changes of that year were not the legislation that is so common which alters without much reason and without preserving congruity. It was almost entirely, if not altogether, necessary to make the statutes what the Legislature originally supposed or meant them to be.

There was no meeting of the Legislature from that time until 1846, when further amendments in considerable numbers were not made, and when many of them were not needed. It was more difficult than ever before to know what the statutes provided on the ordinary affairs of life. In 1846 a new revision was made which contained radical changes in the law.

The courts which were organized in 1836 worked smoothly and the system was satisfactory. With the exception of a local criminal court in Wayne and the adjoining counties, over which Judge Chipman presided which was afterwards cut down to

Wayne county and held by Judge Benjamin F. H. Witherell—no new tribunals were erected, although some special cases were provided for, and the criminal jurisdiction of justices was for a time in courts of special sessions instead of single justices. Proposals were now and then made by zealous reformers to popularize litigation and confine it to courts not supposed to be hampered by any blind adherence to law. But these notions passed away. In 1838 it was found necessary to enlarge the judicial force, and Charles W. Whipple was added to the Supreme bench and a fourth Circuit was created over which he presided. Alpheus Felch succeeded Judge Fletcher in his Circuit, and Daniel Goodwin took the place of Judge Morell. Judge Felch and Judge Goodwin are still among us in the full vigor of their mental powers. Judge Felch, who had previously been Auditor General, was, during his judicial term, elected Governor, and then United States Senator, and still later Commissioner to investigate land titles in California, and in all of his life has been distinguished for diligence, capacity and fidelity. Judge Goodwin who has also filled several important Federal and State offices by appointment or election, resigned his position on the Supreme Court bench after a comparatively short service. He was afterwards President of the Second Constitutional Convention, Judge of the District Court of the Upper Peninsula till it became a Circuit, and thereafter Circuit Judge through various terms, retiring at the last judicial election after a long and honorable service seldom equalled. The old Supreme and Circuit Court system continued until the Constitution of 1850, Judges Warner Wing, Abner Pratt, Sanford M. Green, George Miles, Edward Mundy and George Martin at various times forming part of it. Judge Mundy, the first Lieutenant Governor, was appointed as a fifth judge in 1848. In 1849, by a constitutional amendment submitted and in due time adopted, the office was made elective, and George Martin was the only member of that court who was elected and not appointed.

In 1845 Sanford M. Green was appointed to prepare a new revision. His work, which was very deliberately and carefully prepared and homogeneous, was presented to the Legislature of 1846, conveniently divided in continuous chapters. It was not a propitious time for careful consideration. Several disturbing elements were present. In that winter the Legislature discussed and

decided on the policy of selling the works of internal improvement which had been partially completed. The Michigan Central and Southern Railroads were disposed of to private corporations, and a reduction thereby made in the State debt. The Upper Peninsula was coming into notice in consequence of the location of mining property, and there was considerable discussion of its necessities, and counties were organized within it. The discussion of the removal of the State Capital had not yet begun within the Legislature, but it was not left out of sight entirely. New corporate enterprises were springing up everywhere, and much time was spent in dealing with their special charters. The session was a very busy one, and some relief as well as amusement was found in the final disposition of Lewis E. Bailey's claim for a horse lost in the Toledo war, which had been persistently urged annually, at the cost of much time and patience, and was now allowed.

The session was emphatically a debating one, and Judge Green's symmetrical revision was robbed of much of its completeness, and changed with small regard to its harmony. The most striking changes consisted in abolishing the Court of Chancery, and in creating County Courts with elected first and second judges, having a general original common-law jurisdiction, civil and criminal. The chancery business was transferred to the Circuit Courts. The effect of this sudden revolution at the time was very bad. The equity business was large and important. It was uniformly made to give way to the common-law business, all cases being then tried by jury, and it became subject to the delays which have been proverbial in some other regions, but which did not exist under our thorough chancellors. It was also subject to another radical mischief. The Chancery Bar had up to that time included but a small percentage of the lawyers, and required a separate and thorough examination for admission. Many able common lawyers knew nothing of equity, and even some of the judges had given it less attention than was desirable. The clerks elected for each county, with no professional knowledge, became at once *ex-officio* registers in chancery, and every attorney became a solicitor and counsellor in equity. For several years the interests of suitors were severely tried. It took a long time to get the mixed practice into good working order. The County Courts turned out badly. In some counties where business was large and the right men accepted office, these courts worked reasonably

well. In many counties less care was taken and they did not approve themselves to the public sense. In the beginning the judges were paid by fees, and this injured the standing of the tribunals. This was afterwards changed, and they received fixed compensation. Upon the whole, in spite of the good service of some excellent judges, there was no lamentation when these courts ceased to exist. The experiment was one which it was perhaps well to try. But the changed conditions of business, and the necessity of having courts frequently open and judges who must devote much time to their work, rendered it impracticable to revive the old lay courts, where business men found it no sacrifice to attend short sessions while spending most of their time in their own affairs. The courts organized did not as a rule have either the best laymen or the best lawyers to conduct them. Few important cases ended there, and they served to enable suitors to get one more delay in the progress of litigation, and to encourage vexatious defences. Every separate tribunal, intervening between the beginning and the end of controversy, has the inevitable tendency to induce parties who wish time to prosecute appeals, which would never have been taken unless delay was profitable.

Capital punishment was abolished by the Revision of 1847, and then, as now, there was much difference of sentiment upon it.

The State began to recover from its poverty in 1843 and 1844, and before 1850 was on the way to prosperity. Between 1846 and 1850 the election of judges was much discussed, and in 1849 it was enacted by constitutional amendment that thenceforward all judges should be elective. The Constitutional Convention of 1850 which adopted our present Constitution, contained a very large number of members zealous for novelty. It also had many of the most experienced and statesmanlike citizens of the State. A natural result was that some very radical changes were made, but little, if anything, which could be called revolutionary affected judicial matters. The most unpleasant features were a too great attention to details in grants and limitations of power, which have, on some occasions, endangered the public welfare for lack of discretionary authority in the Legislature. Attempts to fix salaries and some other things which depend very much for their adequacy on changing circumstances, have led to some evil. But a thing which struck many persons unpleasantly was the number of provisions which seem to indicate that it was supposed the people

could not trust their agents and representatives. There are few constitutions which have led to so much litigation concerning the validity of legislation. Much of this difficulty has been modified or removed by the lapse of time and the instinctive adaptation of popular ways to their surroundings. It has, as a whole, been a useful instrument. The evident unwillingness of the people to give it up entirely for a new one shows that it is thought better to amend than supersede it. There are two important provisions which bear upon the statutes. One forbade the passing of laws with double objects or misleading titles, confining every act to the single purpose suggested by its title. This was an excellent rule and has prevented some frauds and much heedless legislation. The other prohibited revisions of the statutes, and authorized compiled reprints of existing laws when needed. Such a compilation was authorized and carried out by Judge Cooley in 1857, whose excellent arrangement, based on the Revision of 1846 as far as practicable, was adopted in the second compilation of 1871, by Judge Dewey. A private enterprise, since of Judge Howell's on the same plan but annotated further, is in general use and well executed.

The repeal of the constitutional requirement of prosecutions of crime by grand juries has led since to a practical abandonment of that system, although not absolutely abolished. The present generation can hardly appreciate either side of the argument. The assaults made upon the system as inquisitorial are in direct variance with the fact that it has been generally insisted on as a safeguard against official oppressions. The average American freeholder is not the stuff inquisitors are made of. It is certainly a questionable policy which makes the prosecution of criminals depend upon the will of a single Justice of the Peace and a Prosecuting Attorney. In many cases it probably is not of much importance. But experience has shown that there are some classes of crimes and some classes of criminals against which the public itself requires the aid of the substantial and fearless tribunal of accusation. There are powerful single and banded criminals against whom injured parties are afraid to complain before a magistrate, and who are known in every large community to count on their immunity from prosecution. Crimes against the election laws, which are the most dangerous of all in their public tendency, are of very frequent occurrence, and are very seldom

complained of. The inefficiency of such grand juries as are now and then summoned is chiefly due to their inexperience. If the law required them to be summoned often enough to make their duties familiar, they would be a very great help to putting down crime, and inspire a wholesome caution in presumptuous wrong-doers.

The provision which allows cases to be heard by judges without juries, where parties do not choose to call them, has never been complained of. There are many cases where a jury would be of no service. The right to demand one ought never to be denied, and there are cases where the intervention of a body of ordinary men dealing only with facts is essential to justice.

There is one constitutional provision which has never been carried out, and which deserves serious consideration. That is the provision which declares that "the Legislature may establish courts of conciliation with such powers and duties as shall be prescribed by law." It seems to have been supposed that so long as parties can arbitrate they need no other friendly tribunal. But where courts of conciliation exist it may be and frequently is made obligatory to resort to them in the first instance, even if parties should not be absolutely bound thereafter to abstain from further litigating; and a fair decision once made will have an effect in bringing parties to reason.

Those who have watched the course and causes of litigation know that a great share of it arises from misunderstanding. This is particularly so in matters arising out of agreements, and larger or smaller business relations. We do not appreciate the fact that while no rule of law can have more than one true meaning it is not only possible but common for men to enter upon business relations with each other without having in their minds any complete identity of understanding. While courts and the State cannot under ordinary circumstances release any one from the obligation of informing himself what the law is, yet in law, as in all other sciences, the definitions are apt to be understood in the light of previous impressions upon the meaning of words and phrases, and the same maxim does not present the same idea to all minds. The most important advantage of the jury system is that juries understand and apply rules as they are commonly understood by the mass of society, and so harmonize legal obligations with the general sense of mankind. The beauty of the common law is that it is not abstract, but is

found in practical applications of right and duty. In a simple state of society there are very few things which all intelligent persons do not understand far enough to escape serious peril. But with the advances and changes of society it very often happens that men become separated in their habits and dealings, so that while familiar with their own surroundings they know little of what is done by those in other pursuits. The landsman knows nothing of seafaring business. The farmer knows nothing of mines and not very much of complicated manufacturing industries. The mutual rights and duties of those engaged in one calling can seldom be exactly the same as those relating to others. The great fundamental principle that the duty owed by one to another usually must be determined by circumstances as they appear at the time, can never be perfectly applied except by those who appreciate the full weight of the surroundings and the habits that have grown up in reliance upon them. Courts and juries with all their care and diligence must often fail to understand what is not within their experience, and abstract justice is not always actual justice.

It has been very common in all times to have within large organizations for labor or business purposes, domestic tribunals for settling difficulties upon equitable principles without delay or expense. Both of these are important considerations. Unsettled controversies may keep interests at a standstill to the damage of all concerned. Delays, too, have a bad effect in keeping parties asunder and aggravating ill-feeling. It is also a good feature of these informal tribunals that parties can make their own showing and explanations in their own way, while the experienced arbiters understand just where explanation is needed. But the great advantage lies in their ability to look at things substantially as the parties do. In mining countries courts have always existed which acted upon the peculiar customs of the business, where contracts and rights depart considerably from those found elsewhere. Similar diversities have been found to make a customary law in many other cases.

The necessity for such a remedy has been found most commonly where numbers of people have similar interests or employments. It has existed in France for a long time, and has been applied to several classes of cases. The members of these tribunals are there called *Prud'hommes* (men of experimental knowledge). As long ago as the time of Philip the Fair, in the thirteenth century,

a council of twenty-four Prud'hommes was formed to decide controversies between manufacturers and traders dealing in their wares. The first French Republic created similar boards to dispose of the ordinary differences between masters and workmen or apprentices. In 1806 provision was made in like manner for the important manufacturing city of Lyons, with powers to extend it to other industrial towns. Several of these bodies were organized in Paris from 1844 to 1848, for metalworkers, weavers, chemical works and builders. The maritime towns have for a great while without legislation had such tribunals among the fishermen. The modern French councils are said to be composed of representatives of employers and employed, chosen by their own orders. One third go out of office annually. Their duties are confined to questions relating to the business. The old fishery boards are supposed to have suggested the others, and are said to have been first known in the southern ports. It is quite likely they were regulated by the ancient sea laws. These arrangements, with perhaps some variations, seem to be regarded as desirable.

Analogous bodies are found in other countries. They are thought to be better and more satisfactory than temporary and voluntary arbitrations, and experience in the difficulties and grounds of difference among particular classes is of great value in enabling them to decide fairly. The effect of the permanent reference committees in our Boards of Trade in preventing commercial litigation in the courts of this State has been very marked.

Courts of conciliation properly organized to settle the differences of employers and employed could hardly fail to remove any rational cause of complaint of unfairness in their mutual relations, and would have the double value of doing justice and of putting captious persons in the wrong. Sympathy would be given where it is deserved, and the common sense of the community would justify withholding it where it is not deserved. When public sentiment knows where justice lies it will not be profitable to provoke it.

With this exception the Constitution has been fairly carried out, in regulating judicial affairs. Unlike the previous constitution, it named all the classes of courts in which the judicial power should be vested, and in most cases left no authority to the Legislature to put it elsewhere. It also does what was not done before

in strictly dividing the judicial power from all others, and in confining its exercise to courts. Many of our old statutes paid small regard to this important consideration. Although with some formal differences, the jurisdiction over causes was left very much as before. The State was divided into eight circuits, subject to change and increase, and the Circuit judges were to be elected in their Districts for the terms of six years. They were to sit singly without associates at the Circuit, and together in the Supreme Court as before, until a separate Supreme Court should be provided for by election from the State at large, for terms of eight years, to consist of four judges. Municipal courts could be created in cities, and the Upper Peninsula was for a time to be a separate District, from which ultimately circuits could be made or enlarged. All of the Upper Peninsula counties are now in circuits. Municipal courts, civil and criminal, were created in Detroit many years ago, and now exist in several cities. The number of circuits is now twenty-eight, so that, including the city courts, the number of judges presiding in common-law courts of record is four times as great as in 1851. Business has multiplied, and for the last ten years there has been a perceptible increase in the prolixity of important trials. It would be difficult to determine the causes of this unfortunate tendency with any sort of unanimity.

Since 1851 there has been an important change in the law of testimony. The common-law rules excluding witnesses for interest or for bad character were pretty much done away under the laws passed while the first constitution was in force. In 1861 all personal disqualifications were abolished, and parties were made competent. Some rules made to preserve confidence inviolate to families and with professional advisers were wisely preserved. There is more reason to doubt the wisdom of the rule excluding a survivor from testifying where other parties have died. The legislative tendency is to keep up and emphasize this distinction, and rather to favor than qualify it.

One class of laws has given occasion for much contention. There is too little uniformity, and too frequent change in the laws which regulate the condemnation of property for various easements and corporate uses. Few of the statutes contain specific provisions for compensating owners for property practically destroyed in value, but not appropriated bodily, and in some cases, under the pretext of benefits, they take it away without

any compensation at all. The power is one very necessary, but justice requires that one part of the State should not have different laws from other parts, and that property should not be disturbed without plain necessity, or confiscated without recompense. Municipal condemnations have made the most trouble in this way.

It is worth considering whether litigation is not too much encouraged by our system by imposing no restriction on appellate proceedings. No one doubts the importance of giving to every one legal protection and redress. But where from the nature of things the cost of controversy will go beyond any possible gain from it, there is much harm done by continued litigation. If small cases, involving no important principle, have once been fairly tried, any further pursuit tends only to injure the public tranquility and burden the public treasury as well as the means of the litigants. Persons of small means are often injured and sometimes ruined by prolonged legal action, and whether right or wrong they can do very little against a wealthier opponent who will not be seriously hurt, though defeated on appeal. There are small cases which represent important principles that should be settled by courts of last resort. Such cases can be easily provided for by requiring leave to appeal, which is always done in cases of *certiorari*. The courts are now driven to extremity to keep up with their business, and if it once gets beyond their power to hear and decide speedily, and the door is still left open for indiscriminate appeals, cases will be, as they have elsewhere been, carried up for delay and vexation until deliverance is hopeless. It was supposed when the Constitution allowed justices of the peace to take jurisdiction up to \$300, and in some cases up to \$500, that the circuits would be relieved. But nearly all cases are appealed if the parties can afford to appeal them, and a large amount of Circuit and Supreme Court business comes up from justices.

When the Constitution of 1850 went into effect, and the Circuit Judges and District Judge of the Upper Peninsula were first elected, all of the existing Judges of the Supreme Court were chosen as Circuit Judges, and Judge Goodwin, a former member of that Court, was elected for the Upper Peninsula. Judge Sanford M. Green, the reviser of 1846, and Judge of the Supreme Court under the old Constitution, still presides at the Circuit, and still retains undiminished respect and confidence. Samuel T. Douglass and David Johnson are the remaining survivors of the first

bench of Circuit Judges, which was made up of very able and excellent jurists. Five of them resigned during their term to return to practice. Many changes have been made since on the Circuit bench and most of them for the same reason. The State has been very well served by its Circuit Courts.

The Supreme Court, as now organized of judges having only appellate duties, was provided for by the Legislature of 1857, and sat first in January, 1858. George Martin of the old bench was Chief Justice and Randolph Manning (former Chancellor), Isaac P. Christiancy and James V. Campbell associates. Judge Manning died in 1864 and was succeeded by Thomas M. Cooley who resigned in 1885 and was succeeded by Allan B. Morse, now in office. Judge Martin died in 1867 and was succeeded by Benjamin F. Graves (who had been chosen to the Circuit bench in 1857) who retired at his own desire at the end of his term and was succeeded by John W. Champlin of the present bench. Judge Christiancy was elected United States Senator in 1875. Isaac Marston succeeded him and continued in office till March 1883, when he resigned and Thomas R. Sherwood, the present incumbent, was elected in his place.

During the existence of the State, which finished its half century of judicial experience on the fourth day of July, 1886, there has been nothing striking or startling in its court records. No judge has been removed from office or convicted of misconduct. No capital sentence has been pronounced or carried out. No person has been tried for a political offence. No court has been prevented by violence from enforcing its orders. Few conspiracies to do mischief on a large scale have created local, and none general, disturbance. The four years of war, in which our citizens played a heroic part, left no legacy of disorder, and returned soldiers have been the best guards of law and order, and have filled and are filling the most responsible offices of peace, and have shared liberally in the administration of justice. It is perhaps one of the most comfortable assurances of public prosperity that our long judicial history is uneventful.

EVENING SESSION—HOUSE OF REPRESENTATIVES.

MR. CHAMBERLAIN :

Having heard the interesting and valuable papers on the Fair Grounds, we have again assembled here to hear the concluding speeches. It is fortunate that the gentlemen who have been assigned to this hall are all so eminent in their professions and so well known to the people of this State as not to need any introduction.

I present James B. Angell, President of the University of Michigan, that crowning glory of our educational system.

THE UNIVERSITY.

BY PRESIDENT ANGELL.

It is fitting that the University should have a place and a voice in the commemoration services of this day. For her birth was almost simultaneous with that of the State. In a few months she is to celebrate the completion of the first half-century of her existence. Four months after Congress recognized the State as a member of the Federal Union, the first board of regents met and began the organization of the University in its present form. From that time the life of the University has been a conspicuous and an integral part of the life of the State.

But in a certain and a very just sense both the State and the University have a common origin, which antedates by nearly half a century the event which we are celebrating to-day. In that great instrument, the Ordinance of 1787, with which the declaration of independence, the Constitution of the United States and the emancipation proclamation alone of our great historical instruments deserves to be compared, lie coiled together the germ of the States and the germ of all our educational institutions. We cannot too often or too gratefully recall the fact that the Ordinance of '87, while providing that five States might ultimately be carved out of the Northwestern territory, also provided that slavery should never plant its accursed foot in this great domain, and declared in words that might well be blazoned on the capitols of the five States, "religion, morality, and knowledge being necessary to good government and the happiness of man-

kind, schools and the means of education shall forever be encouraged." Mark that sublime imperative, "shall forever be encouraged." In these memorable words lies the germ of our free schools. I say the free schools with the University, because they are virtually parts of the same system, and the schools and the University are each incomplete without the other. Both received from Congress, acting in the spirit of the Ordinance, gifts of land for their support. It was only a fortnight after the Ordinance was adopted that appropriations of lands were made for the University and schools, and from that time to this the excellent example then set has been followed in the admission of new States.

By the act of March 26, 1804, disposing of lands in what was then the Territory of Indiana, a township was reserved for a seminary of learning in each of the three divisions of the Territory, one of which became in 1805 the Territory of Michigan, and so received the grant.

It is a very interesting fact that the Indians who occupied this region were early contributors to the fund for endowing the University. By the treaty which Gov. Cass and Gen. McArthur negotiated with the Ottawas, Chippewas, and Pottawatamies, at Fort Meigs, September 29, 1817, the Indians granted six sections of land to be equally divided between the church of Ste. Anne at Detroit and the college at Detroit. Judge Cooley well says in his *History of Michigan*: "The gift was fully equal in positive value and prospectively superior to the gifts for like purposes which made John Harvard and Elihu Yale immortal, and quite as justly entitles Pontagini and his associate chieftains to grateful remembrance among the founders of colleges."

The college of Detroit, which was to share in this grant, was not in existence when the treaty was made, but was established a month later as a part of the Catholepistemiad or University of Michigania, which had been chartered in the previous August. The act providing for the institution with this extraordinary title was drafted by Mr. Augustus B. Woodward, one of the judges of the territorial court. The strange and pedantic language in which the act describes the proposed organization of the University, may conceal at first glance the broad and scholarly conception which was in the mind of its author. It contemplates imparting instruction in nearly all branches of learning and gave the University

authorities the direction of the subordinate schools throughout the Territory. There seems ground for the suggestion of Prof. Tenbrook that the plan of the University of France may have been brought to the attention of Judge Woodward by some of the French residents, and have served him to some degree as his guide in maturing his scheme. All the subsequent developments of the University down to this day have been on the lines which this eccentric man marked out. In his large provision for the support of the institution, he quite exceeded what either Territory or State has ever done, since he required in his act that a tax of 15 per cent. should be levied for its maintenance, and also that 15 per cent. of the proceeds of four lotteries should be appropriated to it.

In 1821, the act establishing the Catholepistemiad was revised. The University was styled the University of Michigan, the trustees were authorized to establish preparatory schools, and religious tests for officers and students were prohibited.

In 1824, patents for the three sections of land granted by the Indians were issued. A serious obstacle was encountered in the attempt to locate lands under the Congressional act of 1804. The act required that the Indian title to the lands to be selected should have been extinguished. It was difficult, if not impossible, to find a township where the Indian titles had been entirely cancelled. This fact being made known to Congress, that body, in 1826, allowed the trustees to select lands equal in amount to twice the original grant. Thus the total grant of lands to the University was equal to two townships and three sections.

The deep interest of the people in education was plainly evinced in the Constitution of 1835, which provided for schools, agricultural and scientific education, libraries and the University, and the appointment of a superintendent of public instruction. Fortunately for the State and for the University, the Rev. John D. Pierce was selected for this position of superintendent. A graduate of Brown University, he had made an intelligent study of the Prussian system of education, then without doubt the best in the world. He proposed at once a most wise and generous plan of organization of the University. It should have three departments, one of literature, science and the arts; one of medicine and one of law. It was to be entirely unsectarian; only \$10 was to be charged to Michigan students for an admission fee and no fee was to be asked for tuition. Twelve regents were to be appointed by the Governor. These, with the Lieut. Governor and Judges of

the Supreme Court, were to constitute the board. He suggested a most judicious plan for the disposition of the land. Had it been adhered to it is probable that the proceeds of the sales would have ultimately yielded nearly a million dollars as an endowment, or nearly twice as much as has been received from them. Time will not suffice for setting out in detail the various steps by which successive legislatures interfered with the execution of the original plan to the great detriment of the University treasury ; though we must not omit to acknowledge our indebtedness to Gov. Mason, who once courageously interposed his veto of a bill that would have robbed us of a large part of our endowment. Worthily does his portrait adorn the walls of the University, where his name must ever be held in grateful remembrance. But in spite of such unwise management of the lands, it is but just to say that no other of the five States out of the Northwest territory realized half as much per acre from its University lands as Michigan did. The lands are all sold except a few acres, and the fund is now about \$550,000, yielding annually to the University treasury about \$38,500.

The newly appointed board of regents was organized early in 1837, and at once addressed itself to the work of starting the University on the plan proposed by Mr. Pierce. But first they decided to establish eight branches or academies in different parts of the State. These schools rendered a valuable service, but after a few years the regents withdrew their support from them and the high school took up the work for which the branches had been instituted.

The board promptly took steps to make a beginning in collecting a library and scientific specimens and apparatus. A librarian was appointed. Dr. Asa Gray, who has since become so renowned as a botanist, was in 1838 appointed professor of botany and zoology and was sent to Europe to purchase \$5,000 worth of books, the beginning of the library which now numbers nearly 58,000 volumes. Buildings were begun. By the autumn of 1841 four dwelling houses for professors and one structure to be used for a dormitory and for recitation rooms (now the north wing of the main building) were completed. It should not be overlooked that Superintendent Pierce wisely used the veto power lodged in him to prevent squandering a large sum, half a million or more, he says, on a large university building.

In 1841 the first class entered. The first student who presented himself is still living and busily engaged in professional life. The professor who received him, the venerable Dr. Williams, died only five years ago. The faculty who filled the chairs of instruction was a strong one, and is remembered with grateful appreciation by the graduates of the first ten years. But the classes were not large.

The purpose of establishing professional schools was never lost sight of, and in the autumn of 1850 the medical department began its work with a class of ninety in a building which had been originally designed for a chemical laboratory. The number of medical students rapidly increased, and the growth of the medical department has subsequently, as well as that of the law department, contributed to increase the attendance in the literary department. By the wide range and thoroughness of its instruction, and the size of its classes, the medical school early won and has held its place in the very front rank of such colleges.

In 1851 the State adopted a new Constitution which provided that the regents should be elected by popular vote, and should have entire control of the University and its funds with freedom from legislative dictation. The new board which came into office Jan. 1, 1852, at once proceeded to look for a president. Heretofore the executive duties had been discharged by professors acting each for a single year. August 12, 1852, Dr. Henry P. Tappan was chosen president. With his succession to office began a new career for the University. He was familiar with the best methods of higher education, both American and European, and was an enthusiastic admirer of the Prussian system. He had broad culture, generous views of university work, and the power of kindling enthusiasm in others. By his public addresses he soon awoke in the State a new interest in the University, while at the same time he broadened and improved the organization of the institution. He departed boldly from the old traditional customs of American colleges by establishing a scientific course to be parallel to the classical course, and to be treated with the same honor. Meantime he strengthened the classical course by calling in those eminent scholars, Profs. Boise and Frieze, to fill the chairs of Greek and Latin. He opposed making appointments on denominational grounds, but steadfastly looked for merit and character alone in judging of candidates for chairs. Largely through his

personal efforts the astronomical observatory and its instruments were secured by the generosity, in large part, of citizens of Detroit, and especially the late Henry N. Walker. It was during his administration, in 1859, that the law school was established, with James V. Campbell, Thomas M. Cooley and C. I. Walker as professors.

It is not necessary to say that those eminent teachers quickly drew large classes to receive their instruction. In 1865 a new building was erected for the new department. During President Tappan's term of service of eleven years the total attendance of students increased from 222 to 652. Under his inspiring guidance the University was fairly started upon the paths in which it has ever since advanced and was thoroughly imbued with the spirit which has secured its remarkable success.

In 1863 the Rev. Dr. E. O. Haven succeeded Dr. Tappan in the presidency under circumstances which threatened to make his labors disagreeable and difficult. But his tact and skill and happy temperament soon smoothed his way and rendered his administration very serviceable. In 1866 an unsuccessful attempt was made to introduce instruction in homeopathic medicine into the University. In 1869 the Legislature gave to the institution for two years an appropriation of \$15,500 a year, furnishing a help which was so sorely needed by the rapidly growing University. During the six years of Dr. Haven's presidency several new courses of instruction were set up and the number of students increased to over eleven hundred.

After his resignation in 1869, which was universally regretted, Dr. Henry S. Frieze was acting president for two years. In these years, under his able administration, some very important steps were taken. In 1870 women were admitted to all departments of the University. This action was in harmony with the public opinion in the State rather than in the University. But experience has so demonstrated the wisdom of it that both officers and students in the University are now grateful that it was taken. In 1871 the University also set up that intimate and friendly relation with the high schools, by virtue of which the graduates from approved schools are received without examination. This has been of the greatest service, it is believed, both to the University and the high schools, and the system has been widely adopted in other States. It was in 1871 also that the Legislature granted \$75,000 for the erection of a university hall.

In 1871 the present incumbent of the office of president relieved Dr. Frieze. In 1873 the Legislature substituted for the annual appropriation of \$15,500, a twentieth mill tax on all the ratable property of the State, which yielded about \$31,000, and which yields now \$40,500. The same Legislature also provided the means for establishing a homeopathic medical college, a hospital, a supply of water for the grounds, and for meeting obligations which had been incurred in enlarging buildings. In 1875 the dental college was established by the aid of an appropriation from the Legislature. In 1876 the school of pharmacy, which had virtually existed for eight years as a part of the library department, received a distinct organization. In 1880 a spacious building for which an appropriation by the State of \$40,000 was made, was erected to hold our scientific collections. In 1881 the Legislature generously gave \$100,000 to construct a fire-proof library building and art gallery. In 1885 the sum of \$15,000 was voted for the erection of a shop or laboratory in which our engineering students may familiarize themselves with mechanical processes. Of late years important improvements have been made in the courses of study in the different departments. During the last fifteen years minor appropriations for various objects have also been made. In the literary department a very large liberty of choice of studies is left to the pupil. The terms in the professional schools have been lengthened from six to nine months, and in the medical schools have been extended to three years. The number of instructors is now seventy. Some years the total attendance of students has exceeded 1,500, and has been much larger than that of any university in the land. Its constituency is not only national, but cosmopolitan, as it draws its students from all the States and Territories in the United States and from every continent of the globe.

In addition to the generous appropriations which successive Legislatures now for years have made to aid the University, she has received the benefits of private liberality. Not to mention many minor benefactions, we may well recall the following very large gifts, viz.: Rau library and constant additions to it by Philo Parsons, the McMillan Shakespearean library by James McMillan, the Buhl law library by C. H. Buhl, the peal of bells by A. D. White, J. J. Hagerman, and E. C. Hegeer, an anonymous gift of books worth \$2,500 to the political science library, the Lewis col-

lection of works of art, bequeathed by the late Henry C. Lewis, and valued at more than \$200,000, and the Rogers collection of statuary, presented by Randolph Rogers, the eminent sculptor, and valued at about \$200,000, the Chinese exhibit displayed at the New Orleans exposition and presented by the Chinese government, and the Goethe library which our German friends are now gathering. It would seem, therefore, that not only has the State settled finally upon the policy of meeting the most pressing needs of the University, but that large personal benefactions may be expected in the future.

I have thus given a rapid and brief sketch of the origin and development of the University. Its growth is, we may confidently say, without a parallel in the history of American universities. Its name is spoken with honor wherever American scholarship is known. It has long had in its faculties professors whose fame has circled the globe. It has done its full part in making the name and fame of Michigan familiar to the world. And looking back to-day on the proud history of the State, shall we say that the fathers erred in laying deep and broad the foundations of the University? Does not rather their work stand as a monument to their wisdom and foresight? They not only secured almost without cost a generous education for their own children, but they saved at least three generations of educated men to Michigan. They made certain at an early day the collections of museums and libraries, which could probably not have been gathered in a century through private generosity. Nor can it be questioned that the University has exerted a most powerful, elevating and stimulating influence upon the public schools and especially upon the high schools of the State. It has attracted a large number of men of high intelligence and character from other States who, after completing their studies, have remained to strengthen and enrich this State with useful lives. The power and influence of the University have been felt throughout the length and breadth of the State, nay, throughout the whole nation and in many a foreign land.

Now what has been the total cost to the State of all these great results which have been achieved by the University during the half century of its existence? The State has in all appropriated from its own treasury \$1,024,071, and it has now actually in its possession at Ann Arbor, buildings, libraries, apparatus, land and other property valued on a moderate appraisal at about \$900,000.

Really the outlay over and above the material objects which have been purchased with it and which the State now holds is about \$125,000. In other words the absolute cost to the State for fifty years has been on an average about \$2,500 a year. But moreover, if we reckon the value of the gifts which have been made to the University, in works of art which may, I think, be set down at about \$400,000, it appears that the State now holds property at the University worth nearly \$300,000 more than the entire sum that the University has received from the appropriations by the State. It may be doubted whether the history of higher education anywhere presents a parallel to this achievement.

Well may we cherish the memory of the fathers who so wisely laid at once the foundations of the State and the University, and of those who so wisely builded on the foundations so well laid. The State and the University ! As God has so constantly refreshed and strengthened them with the dews of His grace, and has enabled them to add to the prosperity and glory of each other, so may He ever continue to multiply His blessings on them both !

MR. CHAMBERLAIN :

The Commission selected ex-Senator Charles E. Stuart, and as his alternate ex-Congressman Augustus C. Baldwin, to prepare a paper on the Senators and Representatives in Congress from Michigan.

Senator Stuart's feeble health compelled him to decline. Mr. Baldwin accepted, but a sudden and serious, though temporary sickness, prevented him from preparing the paper. Within a few days, ex-Congressman Roswell G. Horr was asked and consented to make such remarks on this subject as the limited time would permit him to do.

Ladies and gentlemen : Hon. Roswell G. Horr.

MICHIGAN IN CONGRESS.

HON. R. G. HORR.

LADIES AND GENTLEMEN : I am called upon here to-night to talk to you for a few moments upon the career of Michigan for the past fifty years in the Congress of the United States. In justice to myself you will permit me to say that I perform this

duty not as a "regular recruit," but rather as a "drafted volunteer." This work was to have been done by another, a man of long residence and distinguished public service in this State, but unavoidable circumstances prevent him from performing the task. Our Governor upon learning this, only three days ago, with that modesty for which he is so justly noted, ordered me peremptorily to take my place in the ranks.

I am not sure, however, that this short notice will not after all conduce to your comfort and convenience, for while you may get less of "Michigan in Congress for the last fifty years" than seems desirable on such an occasion as this, still you will get compensation for the loss right here on the spot, by getting fifty minutes less of me!

From 1836 to 1843 the State of Michigan had but one representative in the lower house of Congress. From 1843 to 1853 she had three members. From 1853 to 1863 she had four members. From 1863 to 1873 she had six members. From 1873 to 1883 she had nine members. Since 1883 she has had eleven members of Congress. Nothing more strikingly sets forth her growth as a State than the fact that in fifty years she has increased her representation in Congress from one member to eleven, notwithstanding that in 1836 every 60,000 inhabitants entitled a State to one representative, while now it takes over 150,000 people for each member of Congress.

Since the admission of Michigan as a State sixteen different men have represented her in the Senate of the United States, and she has had seventy-six different men in the lower house of Congress, but six of these, to wit: Lucius Lyon, Charles E. Stuart, Kinsley S. Bingham, Jacob M. Howard, Thomas W. Ferry and Omar D. Conger are also included in the list of Senators, having served in both branches of the National Legislature.

Such is the transitory nature of fame, that I doubt if there are a score of men in this large audience who can give the names of our first two United States Senators—a few of the oldest men here may be able to do so from their memory of those early times. To be frank with you, I had not the slightest idea until I had looked them up, and when I found out, to my chagrin I had no recollection of having ever before heard the name of either of them. Lucius Lyon and John Norvill were the first Senators from Michigan in the American Congress. Of her sixteen Sena-

tors seven of them are still living. Her sixth Senator and fifth Governor, Alpheus Felch, is not only alive, but hale and strong, so that he is able to be with us on this anniversary occasion. Few men have ever lived through such a fifty years of the world's growth and been in active, working manhood during the entire half century.

The first Representative in Congress from Michigan was Gen. Isaac E. Crary. He represented the State for six years, having been elected three successive times. He became quite famous in his day on account of his encounter with Hon. Thomas Corwin of Ohio. Political excitement ran very high during his Congressional career, which included the wonderful Harrison campaign of "log cabins and hard cider" in 1840. Gen. Crary took it upon himself to criticize the military ability and career of the Whig candidate for Presidency, Gen. Harrison, and unfortunately for himself referred to his own experience as an officer of the militia which he claimed gave him a right to speak upon military matters, and enable him to intelligently criticise the exploits of the hero of Tippecanoe.

He was followed by Thomas Corwin, in one of his most inimitable speeches. Such a combination of wit, ridicule and sarcasm, dressed up with classical allusions and sparkling sentences, can hardly be found elsewhere in the English language. It has since found its way into works on elocution and rhetoric and will be recited by students of literature for ages yet to come. So complete and telling was it, that a few days afterwards, John Quincy Adams, "the old man eloquent," referred to our unfortunate member as "the late Gen. Crary of Michigan."

Notwithstanding this mishap, I am told by men who knew him, that Gen. Crary was a man of excellent parts, and that to no one man are we more indebted for our present magnificent common school system, than to this general of our State militia. He was followed by Jacob M. Howard, who alone represented Michigan on the floor of the House in the 27th Congress, and who afterwards became a very able and successful member of the United States Senate.

Of our sixteen Senators all of them have been able, painstaking legislators, and two of them have reached positions of great national renown.

It makes little difference who might be giving the history I am

now attempting; it matters not to what political party he might belong, the names of Lewis Cass and Zachariah Chandler would head his list of Michigan statesmen. And yet no two men were ever more unlike in their natural gifts and personal attainments. Lewis Cass was a cultivated scholar, an able lawyer, an experienced diplomatist, a consummate debater and a polished statesman. He is the only man from our State who was ever selected as the standard bearer of his party for Presidential honors. True he was defeated, but we must not conclude on that account that he was unworthy, because, Mr. President (Henry Chamberlain), you and I know that most excellent men are not always successful at the polls? Mr. Chandler was not a lawyer, was not a scholar, had no experience abroad in diplomacy, seldom took part in debates, and yet he won great distinction as a patriot and successful party leader.

Like General Grant, his crowning intellectual trait was his rare common sense. In a knowledge of practical things he was immense. He was at home in the vernacular of the common people, knew how to call things by their right names; and add to that his rugged courage and one can readily see what made him a natural leader among men. His short, pointed speeches always seemed to supply a deep-seated want. Like Abraham Lincoln, his masterpiece in speech-making was hardly ten minutes long, and yet in its way it will always be looked upon as a model, as a classic.

Gov. Woodbridge and Jacob M. Howard were both able men, in some respects the superior of Mr. Chandler, and in others the equal of Lewis Cass, and yet neither of them won any such place in the annals of this country as will be accorded to Cass and Chandler. These two men seem to have been born for exactly the times in which each one lived, and each of them did his life-work well.

I have sometimes thought that members of Congress may be divided into three grades or classes. A large number of men who find their way to the National Legislature, do little except it be to look after the wants of their immediate districts and perhaps the interests of their several States. They are careful, painstaking, often able men, who are satisfied with such limited work and influence. To this class belong the majority of men who have been in Congress from all the States of this Union, and of course Michigan is no exception to this general rule.

Another class of Congressmen is composed of men who not only attend to the affairs of their own districts and States, but who also take an active part in national matters, men who help to shape the general legislation of the country, men who acquire national reputations and would always be mentioned as among the foremost men of the House. For a new State, Michigan has had her full share of such legislators, but no one would expect me to single out and name them. It would be a little hazardous for any one to attempt the job, and especially dangerous for a man who has acted in the capacity of a legislator himself, and so would be compelled to sit in judgment on his fellow members and to state conclusions as to the capacity and standing of his warmest friends. Then again there is a still smaller class of Congressmen, who become leaders of men, who will go into the history of our country as the men who had the ability to originate great measures and the tact and courage to defend them, men who combine large brain power with a genius for practical politics, such men shape the policy of parties and contribute much to the weal or woe of the nation. The United States in its 110 years of existence has furnished quite a long roll of these able men, but our State in its fifty years can boast of very few of them—I mean such men as Henry Clay, John C. Calhoun, Daniel Webster, Stephen A. Douglass, Thaddeus Stevens, Robert Schenk, James G. Blaine and James A. Garfield.

No State need be ashamed of its Congressional record which has furnished to the House of Representatives such men as Robert McClelland, Charles E. Stuart, Wm. A. Howard, Austin Blair and Omar D. Conger, to say nothing of a long list of able members almost equally noted with those just named. Still very few of them all can be said to rank with the choice names mentioned a moment ago. Perhaps Wm. A. Howard may be included in that list. I well remember when a young man, during the fearful struggle for freedom in the then Territory of Kansas, that the name of Wm. A. Howard became almost a household word all over the North. He stood out as a central figure in that noted contest, and to his genius and courage, as much as to that of any one man, was due the grand outcome of that early battle for liberty and free territory in this country.

So many of the men who have served our State so well and so ably during the last fifty years are still living among us that it would be embarrassing to select names as being especially deserv-

ing from among them. I do not propose to enter upon any such undertaking.

Among all our public men one only has ever reached the position of Acting Vice-President of the United States. During many months Hon. Thomas W. Ferry held that position by virtue of his election as President *pro tempore* of the Senate. He occupied that important place during the memorable contest which resulted in the Electoral Commission and which ended by placing Mr. Hayes in the Presidential chair. At that time the duties of the President of the Senate were very delicate and difficult. Mr. Ferry, however, passed through the heat and excitement of that trying hour with great firmness and signal ability, so much so that he won the approval of his political enemies and the confidence of his own party friends.

Of the sixteen United States Senators only two of them were born on Michigan soil, Thomas W. Ferry and Thomas W. Palmer. Indeed, of her nineteen Governors David H. Jerome alone was born within our borders, and of the seventy-six different men who have been members of Congress from this State, only about a dozen of them are natives of Michigan and five of those are members of the present House. Such is of necessity the case in every new State. The political, social, religious and educational growth of all the younger States depends largely upon contributions from older ones, and Michigan was fortunate in receiving her early supplies, mostly from New England, New York, Pennsylvania and Ohio. Such is the character and mental make-up of the men who quit the crystallized society of the east and seek new homes in the wild west, that a new State gets old in all its institutions when it is very young in years. So it came about that Michigan, before she had finished cutting her teeth, could boast of having one of the finest Universities on this continent, and her common schools were looked upon as models even by the older States. All these things had a marked influence in moulding the character of her legislators. Then again the physical geography of Michigan is such as to give her great prominence in some branches of legislation. She has by far the longest water coast of any State in the Union. Her harbors are most numerous. Her rivers, the Detroit, the St. Clair, the Soo and St. Mary's are of the greatest importance to the commerce of the great west. Hence she has been more affected by our national system of internal improvements than has any other State

in the Union. Again she produces many times as much copper as all the other States combined—is one of the foremost States in the production of iron, leads them all in the lumber product, and furnishes nearly one-third of all the salt consumed in the Union.

In agriculture she holds a foremost place and is fast taking a prominent position among the great wool-producing States. In such a commonwealth one can readily see that our members of the American Congress have had immense interests to look after and protect, and great national questions to study and understand. For the past fifty years Michigan men have aided largely in the legislation that has aided our harbors and opened up our great waterways for the benefit of the commerce of this country, and their voices have always been heard in favor of building up American industries, protecting American labor, and making possible so many happy American homes.

When the civil war broke out in this country be it said to the credit of our noble State that she was found solidly for the Union. During the entire war no Michigan member of either branch of the National Legislature ever cast a single vote which gave aid or even comfort to the enemy. Let it be remembered by us all with praise and thanksgiving that during that entire conflict every single vote given in the Congress of the United States by Michigan representatives was given in favor of that Union we all so much cherish, in favor of that Constitution we all so much revere, and to sustain the flag we all so much love.

Let us also feel proud of the fact that during all the dark days of that wicked rebellion, our good, kind-hearted President Lincoln leaned on the arm of no civilian with more confidence than he did upon the strong right arm of our own Senator Chandler.

One hundred years is a short time in the life of a nation; fifty years is but a little while in the life of a State. During this half century just closed we may not have produced as many brilliant men as some of the older States, but none of them have outstripped us in material growth, in the education of our people, in the purity of our judges or in the integrity and fidelity of the men who have served us in our National Legislature.

Three of our citizens have held Cabinet positions, Lewis Cass, Robert McClelland and Zachariah Chandler, and all of them so demeaned themselves as to reflect honor upon themselves and credit upon our State. Indeed up to the present date no member of the

House or Senate of the American Congress from Michigan has ever brought any reproach upon the good name of this State; and no national scandal has ever been laid at the door of a single one of our Congressmen.

Let us then, my friends, hope that for fifty years to come our State may be represented in the great councils of the Nation by men equal in patriotism, equal in integrity, equal in business tact and equal in far-seeing statemanship to those who for fifty years past have so performed their important duties as to make all justly proud of our Peninsula State and right glad that our homes are in Michigan.

The following is a list of the men who have served in the Senate of the United States, and in the House of Representatives from the State of Michigan during the first fifty years of her existence as a State:

Senators of Michigan—Lucius Lyon, John Norvell, Augustus S. Porter, William Woodbridge, Lewis Cass, Alpheus Felch, Thomas Fitzgerald, Charles E. Stuart, Zachariah Chandler, Kinsley S. Bingham, Jacob M. Howard, Thomas W. Ferry, Isaac P. Christiancy, Henry P. Baldwin, Omar D. Conger, Thomas W. Palmer—16.

Representatives in Congress—Isaac E. Crary, Jacob M. Howard, James B. Hunt, Lucius Lyon, Robert McClelland, John S. Chipman, Kinsley S. Bingham, Charles E. Stuart, Alexander W. Buel, William Sprague, James L. Conger, Ebenezer J. Penniman, Samuel Clark, David A. Noble, Hester L. Stevens, David Stuart, William A. Howard, George W. Peck, David S. Walbridge, Henry Waldron, DeWitt C. Leach, George B. Cooper, Francis W. Kellogg, Fernando C. Beaman, Bradley F. Grauger, Rowland E. Trowbridge, Augustus C. Baldwin, John F. Driggs, John W. Longyear, Charles Upson, Thomas W. Ferry, Austin Blair, Omar D. Conger, Wm. L. Stoughton, Randolph Strickland, Wilder D. Foster, Jabez G. Sutherland, Henry Waldron, Josiah W. Begole, Nathan B. Bradley, Julius C. Burrows, Moses W. Field, Jay A. Hubbell, George Willard, William B. Williams, George H. Durand, Allen Potter, Alpheus S. Williams, Mark S. Brewer, Charles C. Ellsworth, Edwin W. Keightley, Jonas H. McGowan, John W. Stone, Edwin Willits, Roswell G. Herr, John S. Newberry, John T. Rich, Edward S. Lacey, Henry S. Lord, Wm. W. Weber. Oliver L. Spaulding, Edward S. Breitung, William C. May-

bury, Julius Houseman, Nathaniel B. Eldridge, Edwin B. Winans, George L. Yapple, Ezra C. Carleton, Byron M. Cutcheon, Herschel H. Hatch, Edward Breitung, James O'Donnell, Timothy E. Tarsney, Spencer O. Fisher, Seth C. Moffat, C. C. Comstock—76.

Mr. CHAMBERLAIN :

Governor Alger, the chairman of the Commission, has been called away by official duties. In his absence, in behalf of the Commissioners, I desire to thank the gentlemen for the very able papers that have been read to-day. The thanks of all are due to all who have taken a part in the musical entertainment, and especially are we under great obligations to Messrs. Pittman, Vernon and Baker, the Committee of Arrangements, who have so successfully managed all the affairs of to-day.

In conclusion: If the exercises of this day have renewed the memories of the struggles, trials and joys past in the minds of those who sit around and immediately before me, the veterans, who, with me, must know that our years here are few in number, and that the sun of existence here must soon sink in the west; if they have kindled in the breasts of these, the young men, who soon must succeed us, one more feeling of patriotic devotion to our country, to our Michigan, then these exercises have not been in vain.

ADDRESSES IN THE SENATE CHAMBER.

HON. HENRY FRALICK, PRESIDING.

LADIES AND GENTLEMEN:—The pleasant duty has been assigned to me to preside over the meeting in this hall, at this fiftieth anniversary of the admission of Michigan as a State into the Union.

It has been deemed appropriate to celebrate the day in commemoration of the event. Eminent citizens, from various walks of life, have been selected to gather up and put into permanent form not only the general history of the State and the current events affecting it, but also the details of its history, and the progress of its important branches, which will undoubtedly hereafter form a part of the State's history.

I have the honor of now introducing to you the oldest Governor, United States Senator, Circuit and Supreme Judge, Bank Commissioner and Legislator of the State, now living—all embraced in one man, who has ably, honestly and most worthily filled all of said offices with the highest credit to himself and benefit to the State, the Hon. Alpheus Felch, who will now address you on the executive branch of the government.

EXECUTIVE.

HON. ALPHEUS FELCH.

The region of country now embraced within the limits of the State of Michigan has not always reposed beneath the American flag or enjoyed the benefit of a republican or popular form of government. Since Europeans first attempted to colonize the northern part of the continent, Michigan has been subject to the jurisdiction of two of the great monarchical thrones of Europe, and has owed allegiance and submitted to the edicts of both in turn. France and England have successively held it in its grasp, and each, for a time, has ruled its destinies. From the earliest encroachment of the French upon American soil in the first part of the sixteenth century it was claimed as a part of that vast

region of country extending from the Gulf of the St. Lawrence to the region of the great lakes, and thence finally by the valley of the Mississippi to the Gulf of Mexico. Michigan constituted but a small portion of that vast territory, and during the French dominion had only a small population, yet the power of the French monarch was extended over it and, under the name of New France, it was subject to his arbitrary authority. By the fortune of war between France and England this territory passed from the possession and jurisdiction of the former into that of the latter in 1760. Another revolution was yet to follow, and the fate of war was again to transfer this fertile and beautiful country to the jurisdiction of another national power. At the termination of the revolutionary struggle in 1783, Great Britain ceded it to the United States, and in July, 1796, the American authorities acquired full possession. Thus for more than two hundred years the flag of France floated over the land, and for thirty-six years that of Great Britain, and each of these nations in turn dictated and administered its laws; and now for more than ninety years the Stars and Stripes have been the proud emblem of our nationality, and our laws have had their origin in the will of the people.

In looking into the history of the executive authority and of those who have administered it here, we necessarily direct our attention to the period of French domination.

The Governors, Lieutenants, Generals, or Viceroys, who performed the duties of the executive officer in Canada, then embracing the present domain of Michigan, as usually given by our historical writers, were twenty-five in number, commencing with Champlain and continuing to the cession of the country to Great Britain. These all held their commissions from the King of France and governed in his name and by his authority. The instructions accompanying their commissions varied little in substance and gave most ample and arbitrary power. They were to command and govern both by sea and land; to ordain, decide and cause to be executed, all that they should judge proper for maintaining, keeping and preserving the places put under their power and authority; and for this purpose they were authorized to commission all officers whatsoever, whether for affairs of war or of judiciary or police, and to prescribe all laws, statutes and ordinances, subject, of course, to the good pleasure of his majesty. Certain powers were to be exercised with the advice of prudent

and capable persons, but these persons were selected by the Governor himself, and the King, across the broad waters of the ocean and harassed by the business of the kingdom, and usually engaged in the fierce wars of the period, was neither readily approached nor able or willing to listen to complaints. It is not too much to say that the executive power which was committed to these governors over the population of Canada was broad enough to render possible the most arbitrary, unlimited and irresponsible despotism with which any country was ever scourged. In the early portion of this period the exercise of these powers did not fall upon the territory now within the boundaries of our State. This region of country was then, with the exception of nomadic Indians, without inhabitants. The first white men came in 1641, but with the exceptions of a few persons connected with the missions, there were no white settlers within the territory until the founding of Detroit by Cadillac in 1701. From that time until 1760, when the jurisdiction passed from the French to the English, the population gradually increased, chiefly by immigrants from the Colony of Quebec. These French immigrants were generally harmless and innocent peasants, but among them were some of fine acquirements and good business ability. They were devoted Catholics, enthusiastic adorers of "beautiful France," and ardent devotees to the King. They settled around and in the immediate neighborhood of the mission and the fort. No people ever had within their own bosoms so rich a fountain of perpetual pleasure. Always overflowing with hilarity, full of jokes and sport of every kind, wild in their simple amusements and lovers of music and of their own soul-stirring songs, none seemed so happy or so thoughtless as they; but when the scene changed and they knelt in their devotions before the cross, the solemnity of the service seemed to banish every worldly thought and kindle within their bosoms the fire of the most ardent saintly devotion. It is impossible now to ascertain how many there were of these French settlers during the time while they were subject to the Canadian authority. The number reported in 1800 was only 551, but forty years had then passed since their country's jurisdiction and officers had been withdrawn, the fur trade and traffic in goods had been interrupted and had largely passed into the hands of the English, and the missions had lost their pristine prosperity. It is, therefore, altogether probable that many of the settlers had

returned to their old homes before the census was taken, or rather estimate made. The Governor residing at Quebec had had during this period little or no direct interference with the settlers in this remote portion of his jurisdiction, but committed their charge chiefly to the commandants of the military posts. These exercised general superintendence as well of the settlers outside the forts as of the soldiers within. Questions of legal rights, both as to person and property, were most frequently adjusted by the kindly interposition of the priest, and, when this failed, by the decision of the commandant. There appears to have been no regularly organized courts, no sheriff, no jail apart from the garrison, nor do the records show that during the period of French jurisdiction there was a justice of the peace or an alcalde, and jurors were entirely unknown. Not an order, law or edict was, during that whole time, published in print, for there was not a printing press in all New France. Nearly all authority, civil and political, was merged in the military, and the settler quietly submitted to the dictates of the commandants. The executive power committed to the military commander was not, however, limited to the well-being or the private interests of the settlers. The commandants' authority extended to all matters of intercourse with the Indian tribes, requiring the utmost vigilance, prudence and wisdom, and sometimes a resort to deadly and bloody combat. He watched and, in a manner, superintended the great occupation of the fur trade, enforced the conditions under which it was carried on by the companies licensed to monopolise it, and punished individuals who infringed upon their privileges. He exercised the high prerogative of granting the King's domain to settlers, and, although these grants or permits were technically not permanently valid without the approval of higher authority, they have come down to us as the basis of title to many a valuable city lot and many a beautiful farm on the Detroit, the Rouge, the St. Clair and the Raisin rivers. After all, it does not appear that the exercise of the executive power of the government in this lake-encompassed portion of Canada while under the domination of the French, although in itself arbitrary and with no available check to despotism, was used with unnecessary severity or unwisdom, or that the settlers felt it to be in any regard oppressive or cruel. Yet under such a system, with trade monopoly and onerous feudal conditions attached to grants of land, with a hostile and cruel foe

surrounding them, with little encouragement from the supreme government, it is no wonder that the immigration was small and the colonial settlement, although in a most beautiful and fertile region, weak and unthrifty.

In the list of twenty-five persons who exercised the office of Governor during the French domination, few are named who are known to history. Two of them, however, were so connected with the early settlement of the country and its colonial affairs that they should never be forgotten. The first of these is Samuel de Champlain, who was Lieutenant General and Viceroy of Canada in 1612. In youth he served in the French navy, and in 1603, under a commission from Henry IV., came to America. He established the city of Quebec in 1608. He went six times to France in the interest of the Colony. He held the office of Viceroy for twenty-three years and yielded it only with his life. He explored the region of the St. Lawrence, ascended the Ottawa and journeyed thence to the eastern shore of Lake Huron; and coasting along the shore of Lake Ontario he passed on to Lake Champlain, and was the first white man whose eyes beheld that sparkling water-gem to which his own name is now most appropriately given. He was an ardent friend of Christianity and aided in establishing many missions. He was a friend of education, and under his patronage a college was established at Quebec, the city of his residence. He was in warm affiliation and friendship with the Huron, Algonquin and other neighboring tribes of Indians, and in their interest he more than once led them to war against the Iroquois, who were the avowed enemies of the French. An active and intelligent man, never tiring in the service of the King or the colonists; true as steel to the interests of both, he was a model pioneer of civilization and a builder worthy to pose as the founder of a new empire.

The next man of note was Count Frontenac. He was twice appointed Governor and served in that capacity from 1672 to 1682, and again from 1689 to 1699. Under him the forts at Michilimackinac and Sault Ste. Marie were established. He was active in exploring the country and extending the French interests in the region of the great lakes and in conciliating the numerous tribes of Indians who roamed over it. He was once removed on unfounded charges made by his enemies, but the alarming condition of affairs with the hostile Indians made his

services again an imperious necessity and he was recalled. Indeed, the case seemed almost desperate. The Five Nations, or Iroquois, the old enemies of the French, had allied themselves more closely with the English, and had secured the friendship of other tribes formerly the allies of the French, and war seemed inevitable. He made every possible effort for conciliation, but in vain. In 1690 an invasion of Canada was made by the New England and New York colonies in conjunction with their Indian allies. The courage and energy of Frontenac was equal to the emergency. With scant time for preparation, he met the invading foe under Gen. Schuyler at Montreal, and, a few days later, he successfully resisted the invasion of Quebec by Sir William Phipps with 2,000 men, and repulsed them with great slaughter. But the aggressions of the Indian foe still continuing, Frontenac invaded the country of the Iroquois and destroyed their towns and a fort erected by the English. Quiet was finally restored and the colony again left in peace. No Governor of the province ever performed better service in peace or in war, and none ever had a stronger hold on the gratitude and admiration of the entire community. His wisdom and forbearance averted many a threatened evil; his firmness and courage repulsed or avenged many an aggression. He was a man of decided ability, a friend and counsellor of the struggling colonist, and he well merited the meed of praise due to one who, with singleness of purpose, has devoted his life to the good of his country.

With the taking of Quebec, signalized by the chivalrous acts and lamented death of General Wolfe in 1759, all of Canada fell into the hands of Great Britain, and the possession of it was afterwards confirmed by treaty. In September, 1760, Major Rogers appeared at Detroit, as the representative of England, and demanded and received the surrender of that place. The proud flag of France was lowered, and the red cross of St. George floated in its place. The power of the conquerors over their conquered foe here exercised its first act of dominion in Michigan. The soldiers of the French garrison defiled upon the plain, laid down their arms and were sent prisoners to Philadelphia. The Canadian militia were called together and disarmed, and they took the oath of allegiance to the new sovereign. The Canadian inhabitants were permitted to retain their possessions on condition of taking the same oath. The other posts in Michigan were soon surrendered in

like manner, and the entire country of the lakes thus passed from the dominion of France, and henceforth, for a time at least, English rule was to prevail and English agents to administer the law. Little immediate change, however, was made by the British authorities in managing the affairs of the newly acquired territory. It was regarded as a conquest and held subject to the arbitrary power of the conqueror. The exercise of this power was committed to an officer, sometimes denominated Major-General and Commander-in-Chief, sometimes Governor of Quebec, sometimes Governor-General, and sometimes Governor of Upper Canada. The seat of this power was, as before, at Quebec. These were the executive officers to whom Michigan was subject until the jurisdiction passed into other hands. During this period of thirty-six years—from 1760 to 1796, when actual possession was obtained by the United States—the executive office was exercised by ten different persons. They were in fact military commanders, and they entrusted the administration of their duties largely to the local military commanders at the several military posts. It is difficult to see much improvement in the condition of the occupants of the country or of the province itself by this change of national jurisdiction. It was still a military despotism where arbitrary power might work its will, and redress for unjust, oppressive or despotic acts by authorities was almost hopeless. It is true that during this period a long and bitter strife was carried on in regard to the laws and the administration of public affairs in Canada, and the greatest excitement prevailed among the French inhabitants on the St. Lawrence ; but this had little effect in the remote part of the province on the Detroit. The French colonists insisted upon retaining their old laws, customs and rights of person and property, and their simple method of protecting these rights ; the new comers, accustomed to the more technical laws of England, and greedy of the possessions of the conquered, insisted upon radical changes in their favor. In the bitter controversies which characterized this strife, the Michigan colonists seem to have taken no part.

The military power of the local government was generally well exercised in the protection of the settlers. It was during this period of English domination that Pontiac matured his plan of restoring his people to their ancient hunting grounds, destroying all military and other obstacles and staying the tide of immigra-

tion and settlement; and the utter defeat of his forces in his onslaught upon the fort at Detroit alone secured safety to the settlers.

As to the exercise of power under the British rule, in regard to the civil rights of the inhabitants, we have few records; but little complaint seems to have been made. It appears, however, that the commander of the fort at Detroit exercised jurisdiction in criminal cases, and on one occasion, not long after the surrender, on the trial of some persons charged with affording assistance to Pontiac, he found them guilty and sentenced them to banishment from the country. In 1767 Captain Trumbull, who was then in command, appointed Philip Dejean a justice of the peace, and afterwards issued to him another commission enlarging his powers and giving him cognizance of small civil causes, and designating him as "Second Judge." But the judge did not confine his labors or his jurisdiction to the hearing of small causes. We have evidence that in three instances, at least, trials for capital offences were held before him and the offenders convicted and sentenced to execution. The conviction of these persons and the execution of two of them, with other acts of alleged severity, caused much popular indignation against the judge, and he was indicted for his acts by the grand jury at Montreal; but his friends interfered in his behalf and, on appeal to the Governor-General, he was allowed to go unpunished.

It is manifest, also, that the English commanders and lieutenant-governors assumed power over the vacant lands and gave possessory grants of them. In 1763, however, by the King's proclamation, such grants were expressly forbidden, and fifteen years later an order issued by the Governor-General expressly directed the commander of the post at Detroit to annul and make void, by public act, every concession made by any British commander since the acquisition of the country, and to prevent any new settlement whatever. From the time of the cession of the country by France to Great Britain to the surrender of it by the latter to the United States under the treaty of 1783, neither the population nor the business of Michigan appears to have made much advance; immigration was not encouraged, agriculture made little progress, and enterprise of all kinds was suppressed rather than fostered. While in Quebec, and Montreal and Three Rivers they had, at least for most of the time, a Legislative Council and courts and

juries and other subordinate officers and a formal administration of the law, the region on the upper lakes was treated as a border country beyond the pale of civilization, and was committed to the charge of a subordinate military officer in command of the British fort. And in this condition it came to the jurisdiction of the United States at the end of the struggle for independence, by the treaty of 1783, although actual possession was not obtained until 1796.

Among the men to whom was committed the executive power during the period referred to, the most distinguished was Sir Guy Carleton. Twice he held the position, first in 1766 and again in 1774. He early distinguished himself as a military commander, and was active in the British service in the war of the revolution, and he especially commanded the admiration of the Canadians by the able and gallant manner in which he met and defeated Montgomery in his attack upon Quebec. During his entire administration he showed himself both just and liberal towards the French inhabitants of Canada, and urged their right to the full enjoyment of their ancient privileges, their laws and their customs. He regarded the strict enforcement of martial law as a violation of the articles of capitulation, and he inaugurated a more just and liberal policy. But unfortunately the breaking out of the war with the American colonies called him away for service in the field, and with his departure the French inhabitants of Canada lost the most liberal and just of the early English governors.

On the surrender of the forts in 1796 the territory now constituting the State of Michigan for the first time fell under the actual jurisdiction of the United States. A local government under that jurisdiction was already organized and in operation, and the newly acquired territory was at once recognized as within its limits and under its authority. Under the provisions of the Ordinance of 1787 *for the government of the Territory of the United States Northwest of the River Ohio*, the machinery of a territorial government was in full operation, with its capitol at Marietta, Ohio. On the fifth day of October, 1787, Congress had elected Arthur St. Clair as Governor of the Territory and Winthrop Sargent Secretary, and a few days later they appointed three persons as Judges of the Territory. To the Governor and Judges was committed the full power of executive, legislative and judicial duties; together they constituted a Legislature, with certain limitations imposed by the

Ordinance on their acts; the Governor alone had full executive authority, and the Judges the judicial. In 1795 they had caused a code of laws to be printed, and as Michigan was regarded as a part of the Territory Northwest of the Ohio temporarily withheld by a foreign power, on the withdrawal of the English the laws of the Territory at once extended over it. These laws continued with slight modifications, perhaps, to be the laws of Michigan until 1800. In May of that year the Territory Northwest of the Ohio was divided into two parts, and the western portion organized into a new territory under the name of Indiana. This division cut the region of country now embraced in our State into nearly equal parts by a line running north and south near the eastern boundary of the present county of Calhoun, transferring to the jurisdiction of the new Territory of Indiana the region west of that line, and leaving the portion east of it as a part of the original Northwestern Territory. By Act of Congress approved April 30, 1802, the eastern division of the Territory Northwest of the Ohio was authorized to form a State government, and under it the State of Ohio was organized. This organization, however, did not embrace within the State boundaries the eastern portion of Michigan, but the law, by express provision, annexed it to the Territory of Indiana. Thus the western half of our State became a part of the Territory of Indiana in 1800, and the eastern half not until 1802, and both portions continued under the jurisdiction of that Territory from these dates respectively until the Territory of Michigan was organized under the Act of Congress approved January 11th, 1805. General William Henry Harrison was Governor of the Territory of Indiana during this period. The Territory of Michigan was organized with a government similar to that provided in the Ordinance of 1787, except that the first officers were to be appointed by the President, by and with the consent of the Senate, instead of being elected by Congress.

Thus it appears that the entire area of the present State of Michigan was for four years after the surrender by the British (1795-1800) under the executive authority of the old Northwest Territory, and that the eastern half of it continued under that jurisdiction two years longer (1800-1802). The western half was a part of the Territory of Indiana during a period of about five years (1800-1805), and the eastern half for about three years (1802-1805).

The first exercise of executive authority under American jurisdiction within the present limits of Michigan, was contemporaneous with the surrender of the post at Detroit. General Anthony Wayne was directed to receive the surrender of the British forts, and came to Detroit for that purpose. He was accompanied by Winthrop Sargent, Secretary of the Territory and then acting Governor, General St. Clair being temporarily absent. Immediately after the British flag had been hauled down and the Stars and Stripes run up in its place, the Governor proceeded to the exercise of the authority granted by the Ordinance of 1787—by establishing the county of Wayne, designating its officers and declaring Detroit the seat of justice. Courts were thereafter held here by the territorial judges who resided in Ohio, and they were usually accompanied by members of the Bar, who found their long horseback ride an enjoyable pastime and their professional practice remunerative. It is the testimony of one of these attendants upon the courts—Judge Burnet—in his “Notes on the early Settlement of the Northwestern Territory,” that a large number of suits were commenced, many of them to test the correctness of the decisions of the commandants, that the docket was soon crowded with causes, and the practice as lucrative as in any other county in the Territory. The suitors, witnesses and jurors were mostly French, and the services of an interpreter were always required. On one occasion great offence was given to this portion of the population by Judge Symmes by an allusion in his charge to the Grand Jury to their devotion to their religious ceremonies, but the dissatisfaction was removed and good humor restored by a conciliatory explanation made by him from the bench. In 1798, in accordance with the provision of the Ordinance of 1787, representatives to the first general assembly of the Territory were elected by popular vote. Wayne county, then embracing all the country within the present limits of the State of Michigan, elected three representatives, one of whom was the Hon. Solomon Sibley, afterwards one of the Judges of the Territory of Michigan. The representatives assembled at Cincinnati in February, 1799, and selected and nominated ten persons to be returned to the President, five of whom were selected and commissioned by him as a Legislative Council.

From the time of the surrender by the British of the fort at Detroit there has been no interruption to the full exercise of civil government in Michigan.

While a part of the "*Territory Northwest of the River Ohio*," Governor Arthur St. Clair, a distinguished soldier and a wise and able man, administered the government with firmness and discretion. He was a native of Scotland and came to America in 1758, at the age of twenty-four years. He distinguished himself as a gallant officer in the struggle of the Revolution and rose to the rank of Major-General in the Northern Department, and became a member of the military family of General Washington whose confidence and friendship he always enjoyed. He became a member of the Congress of the Confederation in 1786 and in 1787 was chosen its president. He was its presiding officer at the time the famous Ordinance of 1787 was passed, and, as such appointed the committee which prepared and reported it; and he was the first governor appointed under it. It seems that he was reluctant to accept the position when offered to him, but considerations which do credit to his foresight finally overcame his reluctance. In a letter written after his election as Governor, he says that he would not have accepted the office but for "the laudable ambition of becoming the father of a country and laying the foundation for the happiness of millions then unborn." Governor St. Clair strongly opposed the organizing of the State of Ohio, and at the time of drafting the first Constitution by the convention elected for the purpose, exerted himself zealously in opposition to it. He especially opposed the proposition to dismember the territory by excluding from the proposed State the eastern half of Michigan, then known as Wayne county. That portion of the county had no representative in the convention to present the wishes of its inhabitants; but Governor St. Clair fought the battle so zealously as to give great offence and to seriously impair his personal popularity, and Chief Justice Chase asserts that he was consequently removed from office. Had his arguments prevailed the eastern half of Michigan, embracing Detroit and the rich mines of the Upper Peninsula, would have constituted a part of the State of Ohio, and, very possibly, might have continued so to this day.

During the time that Michigan continued to be a portion of the Territory of Indiana the executive power over it was in the hands of General William Henry Harrison, a distinguished soldier and civilian and afterwards President of the United States. The administration of Governor Harrison was particularly distinguished for the wisdom and courage of his conduct with the Indian tribes,

then highly excited and in open hostility, and the care with which he guarded every interest committed to his charge. The power of the executive, however, during this period was, so far as Michigan was concerned, little more than nominal. In the western there were literally no inhabitants, and in the eastern it does not appear that any interference by the Indiana authorities, was ever practically exercised. I do not find that any of the laws of the Territory of Indiana were ever enforced here, or that any officers acted under their authority, or that any resident of Michigan ever participated in any capacity in the administration of the government or the laws of the Territory of Indiana. But in fact the records of these times are lamentably meagre, and the larger portion of them are said to have been long since destroyed and irrevocably lost.

In 1805 another change took place in the government of Michigan. By act of Congress approved in January, 1805, the Territory of Michigan was formed with boundaries much broader than those of the present State and with the same governmental organization as provided by the Ordinance of 1787, and the act of Congress approved on the seventh day of August, 1789. Detroit was made the seat of government. The organization was perfected by the appointment of General William Hull, as Governor, William Woodbridge as Secretary, and Augustus B. Woodward, Frederick Bates and John Griffin, Judges. General Hull arrived at Detroit and assumed the duties of Governor on the second day of July, 1805, and, under two re-appointments, he continued to hold the office until 1812. The old system of imposing upon the territorial governors duties entirely foreign to an executive office, still continued, and he soon found himself seated at board with the three Judges charged with the responsible duties of legislation for the Territory. The little village of Detroit had been destroyed by fire a few days before his arrival and the prospect before him, on entering upon his official duties in the midst of the desolation, must have been gloomy enough. But if the connection of General Hull with affairs in Michigan commenced in gloom it terminated in the more sorrowful spectacle of his trial on a charge of treason and cowardice and the sentence of death pronounced by a court martial convened at Albany. He came to the office of Governor with a record of previous public services which pointed him out as a man eminently fitted for the position. He was a graduate

of Yale College, and had devoted himself to the study of the law and been admitted to the Bar. He had served in the war of the Revolution from the grade of captain to that of lieutenant-colonel; had fought bravely in many of its battles and had received the thanks of Washington and of Congress for his gallant services.

In the performance of his duties as Governor of Michigan during the six years of his administration, so far as related to the civil duties of an executive, his record is untarnished. He exerted himself to the utmost to secure aid from Congress for the settlers who suffered by the burning of Detroit, and he obtained for them liberal allotments of lands in the new town, and he did much to prepare the way for immigration and for the growth of the city. He is charged with no corruption, or bribery, or oppression, or infringement of private rights, or of any willful disregard of the public weal; yet his administration, both for himself and the country, marks a period of unusual disaster. It was unfortunate for him that legislative duties were thrown upon him, in conjunction with the three judges. Their sessions were always characterized by wide differences of opinion, and often with unseemly strife and wrangling. The Chief Justice, Judge Woodward, was a man of marked peculiarities. He was not without ability; he displayed much obtrusive pedantry, yet was not without learning; he was independent in his thoughts and plans, and seemed to make it a principle never to follow the views of any other person; he delighted in opposition. He was gratified to be at the head of a following that acknowledged his leadership and re-echoed his sentiments, yet, this failing, he seemed no less delighted to stand out solitary and alone, brandishing his weapons and defying his opponents. With such characteristics, it is little wonder that the law-enacting board of the Territory should soon be at loggerheads. The Chief Justice and one Associate were speedily found uniformly acting together; the Governor and the other Associate in opposition. The same spirit of dissension and controversy here begun, soon took a wider range, and the community became sharply divided into hostile parties and vexed with angry controversy. The dominant and aggressive bearing of the Chief Justice could not bend the Governor to his will, but it paralyzed his efforts in the administration of his office and caused him much unhappiness.

On Governor Hull was devolved also the duties of Indian

Agent, and on the successful performance of them important interests depended. He succeeded in obtaining a cession of some lands in the eastern part of the State, but in the main he accomplished little in that capacity. Neither his native talents or disposition, nor the experience of his former life, fitted him for dealing, either in war or in peace, with the peculiar character of the aborigines. Indeed the Indian tribes were at that time little disposed for negotiation and not readily pacified. The great Shawnee Chief, Tecumseh, was already organizing the western tribes into a confederacy against the whites, and the threats of savage incursions and the bloody strife of cruel warfare already begun, brought terror not only to women and children, but to the stoutest hearts. The charge of Indian affairs had always been committed to the Territorial Governors, generally in connection with a military commission, and success had hitherto brought them much praise. St. Clair, while Governor of the Northwest Territory, negotiated the important treaty of Fort Harmer, and led the American troops in the disastrous excursion against the savage foe at the Miami villages. Harrison, while Governor of Indiana Territory, concluded thirteen important Indian treaties and gained the great battle of Tippecanoe. But we must not criticize too severely. The success of Tecumseh in marshalling the forces of the Indian tribes and precipitating them upon the American forces under his own gallant leadership at the very beginning of the war of 1812, clearly shows that during the agitation and excitement that preceded it, there was little chance for pacification or treaty even from the most skillful of negotiators.

The event which terminated the official relations of Governor Hull with Michigan is one of the most sad in American history. Threatenings of war with Great Britain had created alarm throughout the country, and in the event of hostilities an Indian force was sure to attack the western settlements, and none were more exposed to their incursions than Michigan. Gen. Hull was aware of all this, and alive to the danger. He more than once presented to the authorities at Washington the perilous situation of the Northwest, cut off from all available aid as it was by want of communication by the land or by the lakes, which were completely controlled by British vessels. His importunity had no effect, and when war with Great Britain was declared, July 18, 1812, Gen. Hull received a commission as Brigadier-General

to command the army in the Northwest. He marched the forces given to his command to Detroit and after some hostile excursions into Canada the forces again rendezvoused at Detroit. On the 14th of August, 1812, Gen. Brock appeared on the Canadian side of the river and sent to Gen. Hull a demand to surrender, which was refused. Two days after he crossed the river without opposition and repeated the demand. Gen. Hull at once entered into a stipulation for surrender, reserving only the right of private property and the parol of troops on the way who had not yet arrived. Gen. Brock reported his forces at 1,330, and in his official report of the conquest he states the number of the captured at 2,500, both undoubtedly exaggerated. The act of surrender was without the advice of the other officers of his command, and with no general consultation with them. It fell like a thunderbolt on both officers and men, who were ready to die rather than to submit to capture, and who had not a doubt of their ability to repulse the foe. When the news of the disaster spread over the astonished country, one common cry of indignation and grief was everywhere heard. The campaign was broken up, and the flag of Great Britain again floated over the fort. Charges of treason and cowardice were made against the general, and two years afterwards he was found guilty of the latter charge and sentenced to execution, but a consideration of his age and great and long-continued meritorious services in earlier life, secured him a pardon from the President. So ended the administration and the services of the first Governor of the Territory. The question of the merits or the demerits of his last unfortunate public act, and of the influence or the motive which induced his conduct, has not entirely ceased to be discussed, but it is not in our province here to consider it.

From August 16, 1812, to the 29th of September, 1813, military rule prevailed in Michigan. Col. Proctor of the British army was made Military Governor under a proclamation that the American laws should continue to prevail. He appointed Judge Woodward Secretary, and to the great credit of the latter he exercised his influence in every manner possible with his superior to mitigate the sanguinary cruelty and coarse indignities to which the inhabitants were continually subject by his orders. Judge Woodward finally, disgusted with Proctor, retired from the Territory; but he returned again after peace was restored and resumed his duties as Chief Justice.

After the re-taking of Detroit Lewis Cass, then a colonel in the army, was stationed with his regiment at that post. He was appointed Governor of the Territory of Michigan October 29, 1813, and continued to perform the duties of the office until 1831, when he resigned—a period of over sixteen years of continued service. These years constitute an epoch in the history of Michigan, and the executive powers of the government have never been more assiduously or more successfully exercised in building up a new country, or in promoting the growth of agricultural, mechanical or educational interests. When his administration began, the ravages of the conquering foe, whose flag had just given place to our own, were everywhere apparent. The population of the Territory did not much exceed 5,000; when he retired from the office it could not have been less than 35,000. A few years previous the population consisted chiefly of the few scattered French settlers who lived along the river banks, and neither the English nor American domination had added materially to their numbers. But now the eyes of our own American citizens began to be open to the wonderful advantages of the Northwestern country for the settler, and the tide of population began to flow in that direction. It was not perhaps so much what was really accomplished during that period, as the fact that the foundation was then laid for that greater growth and prosperity which has since followed—the laying of a corner-stone upon which a noble, magnificent superstructure has since arisen,—the planting of the humble seed which has sent forth its vigorous shoot, and with its growth has now become a magnificent tree.

The territorial government at the commencement of Gov. Cass' administration was still in that undemocratic state which entrusted the making of the laws to the Governor and Judges. It ignored the existence of popular rights and compelled a submission to officers appointed arbitrarily at Washington. But in the administration of Gov. Cass, his associate officers were men of ability and high character, and they acted in perfect harmony and with a high regard to the interests of the people. So well satisfied were the people with this peculiar form of government, that in February, 1818, when a vote was taken on substituting for it a General Assembly elected by the people, as provided by the Ordinance of 1787, a majority of votes was cast against it.

In the administration of Indian affairs Gov. Cass was most for-

fortunate. He early began negotiations with them and soon succeeded in securing their confidence and respect. Under his administration he secured by treaties with various tribes, large concessions of land in Ohio, Indiana and Michigan, and through his aid important concessions of land beyond the Mississippi were obtained. Sixteen treaties made while he filled the office of Governor are enumerated as negotiated by him or through his influence. The justice and kindness of his dealings with the Indians did much to pacify and quiet them and dispel the fears of the settlers of hostile attacks from them.

The opening of the public domain for sale was indispensable to the settlement of the country. Gen. Cass had urged the necessity of this, and of preliminary surveys preparatory to it. Surveys had been ordered, but it was not till 1818 that the first sales were made by government of lands in Michigan. This opened the country to the immigration of most desirable settlers, who could obtain perfect titles to the lands they might select, and induced them to become permanent citizens.

In the meantime the right of popular representation took strong hold of the public mind and, it is asserted, was always favored by Gov. Cass. In 1818 the Territory was authorized by Act of Congress to send a delegate to that body to be elected by a vote of all taxable citizens. In 1823 the legislative power of the Governor and Judges was abolished and the power transferred to a council of nine persons, who should be selected by the President from eighteen elected by the people; and by another Act of Congress in 1827, a Legislative Council, consisting of thirteen members, was to be elected, who, without sanction by President or Congress, should legislate for the Territory.

The connection of Gov. Cass with the gubernatorial office ceased by his resignation in 1831. He was appointed Secretary of War by President Jackson, and immediately entered on the duties at Washington. His administration as Governor was one of decided success, and while it secured great results to the Territory, it bound him to the people by the strongest bonds of respect and love. Nor did his connection with them cease in after years. He represented the State in the Senate of the United States by election in 184 , and again in 1849. He was Minister to France and Secretary of War under President Jackson and Secretary of State under President Buchanan. His was a long life spent in public

service, and he well deserved the rewards due to a faithful, honest and able public servant. The statue just ordered by our Legislature to be placed in the Capitol at Washington among the statues of the most eminent men of other States of the Union, is a just tribute to his memory. Michigan honors herself in thus honoring her most illustrious statesman.

The next person appointed Governor of the Territory was George B. Porter, of Pennsylvania. He was commissioned in August, 1831, but died after a short incumbency of the office. He was the last Governor appointed during the existence of the territorial government.

He was succeeded in the performance of the executive duties by Stevens T. Mason, Secretary of the Territory, who became acting Governor on the death of Governor Porter. Governor Mason was a very young man. He had succeeded his father, John T. Mason, as Secretary of the Territory, in August, 1831, and it is said that the duties of Governor devolved upon him in that capacity before he was twenty-one years of age. He continued to perform the duties of the office until September 8, 1835, when he was removed by President Jackson. This period of four years is one of note in the history of Michigan. During the time, population was rapidly pouring into the Territory and spreading itself widely through the interior, building up towns and villages and beautifying the country with cultivated farms. Near the close of this period was held the convention which prepared a Constitution for the future State, which was adopted by popular vote in October, 1835. In this year, also, occurred the memorable controversy with Ohio in reference to the southern boundary line—a controversy which greatly excited the public mind on both sides of the line and made conspicuous the Governors both of Ohio and Michigan. The subject of the controversy was really very simple, but the prospective importance of Toledo and its position on navigable waters, prompted the almost frantic exertions of Ohio to secure it for that State. Ever since the Territory was organized, the line, surveyed and well defined, running a few miles south of Toledo, had been the recognized boundary to which the territorial jurisdiction had been exercised. It lay within the recognized limits of Monroe county, a county which was organized in 1817, and had continued from the first to exercise uninterrupted jurisdiction over it in every respect as a part of its territory, until the adverse

claim to possession was urged in 1835. It is true that Ohio had repeatedly petitioned Congress to include the territory in dispute within her limits by establishing the line known as the Harris line—a line run on a course departing from that established by the Ordinance of 1787, and by the acts establishing the limits alike of Michigan and Ohio, but the applications were never successful. An act of the Legislature of Ohio passed in accordance with a recommendation contained in the Governor's message of February 6, 1835, extending the jurisdiction of the State over the disputed territory, and providing for the appointment of officers to carry that jurisdiction into effect, and to run and mark the line claimed by them, caused great excitement in Michigan, and the Territorial Council, on the 12th of February 1835, passed an act making it a criminal offence for any person to exercise, or attempt to exercise, any official functions, or officiate in any office or situation within the present jurisdiction of the Territory by virtue of any commission or authority not derived from the authority of the Territory or of the United States. Resistance to the exercise of the authority of Michigan soon followed. The sheriff attempting to arrest individuals against whom he held warrants on criminal charges was resisted, and one of his deputies wounded. The *posse comitatus* was called out in aid of the sheriff. But the resistance to the lawful authorities now assumed a more alarming aspect. The Governor of Ohio determined to enforce the law of that State by taking forcible possession of the territory and ousting the Michigan authorities, and he called out a military force for that purpose. The authorities of Michigan would not submit to this forcible dispossession, and by the order of the Governor a portion of the military of the Territory was sent in aid of the civil authorities. The aspect of affairs became alarming, and forcible collision between the armed forces of the two parties was liable at any moment to lead to bloodshed. The national authorities at Washington were alarmed with the threatened collision. The President referred the question of legal rights to the Attorney General, and that officer on the 21st of March, 1835, in an exhaustive and lucid opinion, concluded as a result, that the territory in dispute must be regarded as forming a part of the Territory of Michigan, and that it was the duty of the President so to regard it and to protect and maintain it—that the act of the Legislature

of Ohio extending the jurisdiction of that State over it was repugnant to the acts of Congress on the subject, and its enforcement would involve a most serious violation of the laws of the United States. He held, also, that the act of the Legislative Council of Michigan making it a criminal offence, punishable by fine and imprisonment in any person who should exercise or attempt to exercise any official functions, or officiate in any office or situation, in the disputed territory, by virtue of any commission or authority not derived from the Territory or the United States Government, was a valid law; and he strongly intimates that if an armed force should invade the territory for the purpose of establishing the jurisdiction of Ohio by force of arms, the authorities of Michigan might properly repel force with force in defence of their rights, and if this did not avail, it might become the duty of the President to render more effective aid. The situation of affairs became more and more alarming and military forces on both sides were called into service, and commenced their march towards the disputed territory. It then became more than a mere local controversy, and presented a question of national importance which greatly perplexed the authorities of the federal capital. A hostile collision was imminent. The President was anxious to avoid such a conflict, and ardently desired an amicable arrangement of the matter, and for that purpose appointed two commissioners, Hon. Richard Rush and Hon. Benjamin C. Howard to visit and intercede with the Governors of Ohio and Michigan. They arrived in Ohio April 1, 1835, and for four or five weeks thereafter were engaged in efforts to effect their object, sometimes in Ohio, sometimes in Michigan, sometimes by personal interviews with the Governors and sometimes by correspondence. But the effort was not a success, and on the 5th of May they returned to Washington. During these negotiations Gov. Mason stood firmly by the right of Michigan to the long conceded jurisdiction over the tract in dispute, and to the enforcing of the laws of Michigan within it; and he refused to give any sanction to the organizing of counties, or townships, or courts within it under Ohio authorities. They proposed to him to allow the jurisdiction of Ohio to be extended, and that Michigan and Ohio should exercise concurrent jurisdiction, and that the officers of both should together exercise authority: but to this he refused his assent. They urged him to abandon all idea of force and withhold his assent to the exercise

of it, but he considered it his duty to preserve the integrity of the territory, and to allow the executive officers to enforce the laws of Michigan within its borders ; and, if the circumstances demanded it, he would refuse no aid which the executive might properly furnish. The troublesome question of the southern boundary of Michigan was finally settled by action of Congress in the act organizing the State of Michigan, passed June 15, 1836. This act gave to Ohio the tract in dispute and, as a compensation, added the country on Lake Superior, now famous for its rich copper and iron mines, to the territory described in the Constitution as presented to Congress. By a subsequent assent to this change of State limits by a convention held in Michigan, the new boundaries were accepted, and a subsequent act of Congress settled the controversy forever.

It is needless to say that this controversy gave great annoyance and trouble to Governor Mason. A young man scarcely twenty-four years old, he had to bear responsibilities and perform official duties which required the wisdom and experience of an older man. This controversy brought him into sharp collision with men in high official position and distinguished for long experience and eminent ability. His correspondence on the subject is marked by its directness, its clearness of statement, its cogency of argument. His voluminous correspondence with the President, the Secretary of State, the Secretary of War, the Governor of Ohio, and with Messrs. Rush and Howard, the commissioners ; and his messages on the same subject to the Legislative Council, all evince ability of more than ordinary power, and a zeal in urging the claims and defending the rights of the Territory whose chief executive officer he was. With the Governor of Ohio he was, of course, brought into sharp collision. With the wishes of General Jackson, then President, and whom above all men he admired, he could not comply, and preferred to retire from his office rather than decline to do what he thought duty demanded of him. But on the real question at issue, the question as to the true boundary line under the acts of Congress, and the legality of the proposed action of Ohio in extending her jurisdiction and establishing and maintaining her officers by force within the Territory, there is no evidence that General Jackson took any view different from that of Governor Mason ; and it is certain that the Attorney General, his legal adviser, was clear in his opinion that Michigan was right in her

views on this point, and that the executive should maintain the established jurisdiction, and that, too, by force if invaded from abroad. And this, too, was the expressed view of at least some of the other members of the Cabinet. But the President was anxious to avoid all trouble, and it is said that he was particularly anxious to pacify and conciliate the State of Ohio, whose large vote might be important in the presidential election which was not far off. At all events, he was willing to avoid the threatened collision by allowing Ohio for the time being to establish her jurisdiction, and her newly appointed judges and other officers within the Territory, and that the executive of Michigan should abstain from resistance in the meantime and cease to perform what, in the view of the Governor, was his sworn official duty. On this they disagreed, and Governor Mason was removed from office.

In this long and bitter controversy, Gov. Mason at no time stood alone. The Legislative Council were always with him, and by their legislative acts they not only proclaimed the right but provided efficient means for securing and defending them. The people were with him, and most heartily and zealously supported him and his measures, and gloried in the chivalrous spirit with which he defended their cause. On the eleventh day of September, 1835, the troops having returned from Toledo to Monroe, they were received by Gov. Mason, and the hearty acclamations with which his short address was received, gave ample evidence of the strong hold which he had upon the affections of the people. But this was the last act of Gov. Mason as Territorial Governor. His removal from the office followed almost immediately after. But on the first Monday of October succeeding—a short month after—he was elected Governor of the State of Michigan, under the Constitution of 1835, by a vote of nearly eight thousand to about eight hundred given for the opposing candidate.

Gov. Mason was succeeded in the office by John S. Horner, who was appointed Secretary of the Territory by President Jackson. He arrived in Detroit on the nineteenth day of September of the same year, and immediately called on Gov. Mason, and took charge of the Territorial Government as acting Governor. His official term was short; and on or about the seventh day of November following, he bid adieu to that part of the territory of Michigan now within the limits of the State, and passed on to the west. The gubernatorial career of Gov. Horner was by no

means a pleasant or an exultant one. He came at an unfortunate time. He succeeded a man whose popularity was, at the time, unbounded, and whose praise was on the lips of all. He came to a community excited in the contest over the boundary question, and by no means predisposed to the views which he was expected to represent and to urge. He arrived only ten days before an election was to take place under the State Constitution of Governor and other State officers, and when the territorial organization was regarded very much as a thing of the past. His first act, and indeed almost the only official act of his short administration, was the pardon of certain persons who had been arrested in Monroe and Lenawee counties charged with a violation of the law against infringement of the jurisdictional rights of the Territory. He also sent pardons in blank to the Governor of Ohio, to be used at his discretion. He extended the clemency of his pardons to the accused as well before trial as after trial and conviction. Gov. Horner went to Monroe at the session of the court, and in a communication dated October 19th, 1835, gives a most deplorable account of his expedition and the manner of his reception. The truth was that the Governor became alarmed without cause, and in his fright construed the most harmless and meaningless circumstances into a design against his honor and his life; and his own acts brought ridicule upon himself. He says in his report that "there never was a government in Christendom with such officers, civil and military, and filled with such doctrines, as Michigan." He doubtless found his brief official sojourn in Michigan devoid of pleasure; he had no friends; nobody sought his society or courted his notice; he came to perform acts which were distasteful to the entire community, but that he was foolishly alarmed without cause, and fancied danger where none existed, is manifest. His final departure from Michigan to the western shores of Lake Michigan was doubtless a relief and a source of joy to himself, and it brought no regret to those whom he left behind him.

With the departure of Governor Horner the Territory virtually ceased to exist in that portion of the country lying east of Lake Michigan. But the Territory of Michigan embraced a much larger region of country. The present States of Wisconsin, Iowa and Minnesota and a portion of Dakota were within its limits. These, after the organization of the State, constituted the Terri-

tory of Michigan, and Governor Horner betook himself to this part of his jurisdictional domain, and still acting as Governor of Michigan, issued proclamation calling together the Legislative Council of the Territory. The session was held at Green Bay in January, 1836, and the Council petitioned Congress to provide for the organization of the Territory of Wisconsin. This organization was secured by an act of Congress in May following, and with it terminated the gubernatorial functions of Gov. Horner.

With his departure and the cessation of the territorial government here, the State organization at once succeeded. The Governor, Lieutenant Governor and members of the Legislature, elected in October under the Constitution, took the oath of office at the beginning of November, and put the State government in complete operation in all its departments. From this time until the passing of the final act of admission by Congress, January 26, 1837, Michigan was a State, with its State government fully organized, and its executive, judicial and legislative departments in complete operation, yet a State not admitted within the circle of the Union, nor was the territorial government formally abrogated or annulled. The two jurisdictions stood face to face, but luckily for all parties and for the public peace, no collision occurred, nor were any of the troublesome questions which the anomalous condition suggests, ever mooted.

We have seen that Governor Mason entered upon the duties of the chief executive officer of the State while a very young man, and that he was called to the position with ease, enthusiasm and unanimity. He held the office from November, 1835, to January, 1840. This was the period in which the foundation stones of the new Republic under the Constitution were laid. The present institutions of the State received their origin and largely their form in those early days. Every interest belonging to the people of the State in their individual rights and duties, and every right and duty of the State as such, were necessarily the subject of consideration and care. Gov. Mason's messages to the Legislature show how carefully he studied every subject of public importance and how ardently he labored, in conjunction with the Legislature, to adopt in the young State a system of judicious laws, and to mould a policy which would insure happiness for the present and in the future prosperity and greatness to the Republic. In the performance of all executive duties Gov. Mason was assidu-

ous and untiring. As a man he was genial, kind and companionable, and his personal popularity never ceased. At the end of his second gubernatorial term he entered upon practice as a member of the legal profession in the city of New York, but in a few short years he passed away. I never recall to mind the stirring incidents and events of those early times in the history of our State, that the youthful Governor does not stand by my side—a fitting representative and emblem of the new republic, both entering with youthful vigor upon a career, looking, each in its proper sphere, to a long bright future. But the time of youth has passed. Fifty years of growth have changed the young State into a great and prosperous republic, with a future brighter and more promising than the most enthusiastic then dared to hope; but the man long since, but still in early manhood, passed to that immortality which lies in the great future.

Governor Woodbridge's term commenced in January, 1840, and ended with that year. He was a native of Connecticut, but removed early to Ohio and entered on the practice of the law at Marietta in 1806, and was afterwards a member both of the Assembly and Senate of that State. He came to Michigan in 1814, under an appointment by President Madison, as Secretary of the Territory, and continued in the office of Secretary until 1827. General Cass was during that time Governor of the Territory. In the course of that period the Secretary was often called upon to perform the duties of Governor. He was the first delegate from Michigan to Congress, a Judge of the Supreme Court of the Territory, a member of the convention that drafted the State Constitution in 1835. This long intimacy with Michigan and its varied interests, and the ability and integrity with which he had performed every official duty, gave him exceptional qualifications for the position of chief executive officer of the State, and his fellow-citizens did not fail to appreciate these qualifications, and he was elected to the office in 1839; nor did their partiality end with this. In 1841 he was chosen by the Legislature to the Senate of the United States. In these various positions Governor Woodbridge performed his duties in a manner that did him great credit, and secured the confidence and admiration of all. He was a man of extensive reading and much and varied learning; a modest and retiring man, yet genial and kind in his feelings. Few men were as familiar as he with the incidents and

stirring events of western life; attention was secured, and his listener was sure to be rewarded with the rich treasures stored up in his memory. He died in Detroit, in October, 1861.

John S. Barry, the third Governor of the State of Michigan, was elected to succeed Governor Woodbridge in the office, and his term commenced in January, 1842. He was again elected for the term beginning in January, 1844, and subsequently for the term beginning in January, 1850. This repeated call to this high office by his fellow-citizens shows clearly the high estimate in which he was held by the people, and their confidence in his integrity and capacity. He was a native of the State of Vermont, and his occupation was that of a merchant. His first two terms embraced a time of much embarrassment in business affairs, and very considerable complication in the pecuniary condition of the State. He guarded the public treasury with watchful eyes, and his hand fell heavily on the shoulder of any man who indicated a thought of tampering with the bolt that guarded the treasury. The economy of his administration was proverbial, yet he did not hesitate to pledge his own personal responsibility when the public interest required it for the payment of a public obligation. In 1845 it became necessary for the State to purchase some railroad iron to be used on the State railroad. The iron was contracted for in New York, but the vendor was not satisfied with the responsibility of the State, and would not deliver the iron unless the Governor would personally guaranty the payment of the bonds. This he did, and the iron was delivered and used on the road. It was by law to be paid for out of the income of the road, but at the expiration of the Governor's term of office a considerable amount remained unsatisfied. When about to take his place as his successor, he explained to me the condition of his liability, and expressed the hope that it might be consistent with the public weal to continue the application of the income to the payment of this debt. He had expected that it would be liquidated before his office expired, and if it had been, no man would ever have known from him of the responsibility he had voluntarily assumed. The debt was paid in due time by the State.

The successors of Governor Barry in the executive office were thirteen in number, seven of whom are still living. Those who have departed this life have left an enviable record of services performed and official honors most worthily borne.

EPAPHRODITUS RANSOM, a native of Vermont, after holding the position of Judge of the Supreme Court of the State, entered upon his duties as Governor in January, 1848. ROBERT McCLELLAND, a native of Pennsylvania, became Governor of Michigan in January, 1852. He was a member of the constitutional convention that drafted the Constitution of the State in 1835, and also of that which prepared the Constitution of 1850; was three times elected a member of Congress, and was Secretary of the Interior during the administration of President Pierce. KINSLEY S. BINGHAM was a native of New York, and became Governor of Michigan in January, 1855, and was elected for the succeeding term. He was a member of Congress from 1847 to 1851, and was elected to the United States Senate for the term commencing March 4, 1859. MOSES WISNER, a native of New York, was Governor during the term commencing in January, 1859. He subsequently served as an officer in the Union Army during the war of the Rebellion, and died in the service in January, 1863. HENRY H. CRAPO was born in Massachusetts, and was elected Governor for the term commencing in January, 1865, and again for the next succeeding term. JOHN J. BAGLEY was a native of New York, and held the office of Governor of Michigan during two successive terms commencing in January, 1873. The two persons last mentioned were strictly business men. They were early attracted to Michigan by the prospect it offered for large business operations, and for many years devoted themselves untiringly to their respective business avocations, and they were among the most enterprising, successful and honorable citizens of the State.

Six of the former Governors of the State still survive. These, with the date of the commencement of their official terms, are as follows:

ALPHEUS FELCH, January 5, 1846.

AUSTIN BLAIR, January 2, 1861.

HENRY P. BALDWIN, January 6, 1869.

CHARLES M. CROSWELL, January 3, 1877.

DAVID H. JEROME, January 1, 1881.

JOSIAH W. BEGOLE, January 1, 1883.

RUSSELL A. ALGER, the present Governor, was inducted into that office January 1, 1885, and his term will expire with the present year (1886).

I have thus briefly glanced at the history of the executive power

and of those by whom it has been exercised from the time when the authority of organized government first asserted itself in Michigan to the present time. During this period the Kings of France and of England in turn claimed Michigan as their own, and exercised jurisdiction over its territory and its sparse population; and more recently it constituted a part of the Territory Northwest of the Ohio, and again of the Territory of Indiana. Not one of the persons who were clothed with the executive authority during this long period of time is now living, and probably not one who participated in any manner in the administration of the several governments; nor is there any living of the chief executive officers of the Territory of Michigan, and few, if any, of its other officials. The list of the living Governors is brief; and of these personally it does not become me to speak on this occasion. Most, if not all of them, are here present within the hearing of my voice. Each, in his proper time, has labored, both officially and personally, in building up this noble structure of our Republic. Brothers, let us heartily rejoice together on this anniversary. Our dreams, and the dreams of our fathers, are more than realized. Our cup of joy is full. The grand result of fifty years of toil and anxiety in building up our beloved Commonwealth is spread before us. It is enough. Our hearts glow with thankfulness for the past and the present, and we invoke for our State the richest blessings in centuries that are to come.

EVENING SESSION — SENATE CHAMBER.

HON. HENRY FRALICK, PRESIDING.

THE RAILROADS OF MICHIGAN.

MAJOR W. C. RANSOM.

The State of Michigan was admitted to the Union at the threshold of what may properly be designated in the world's record as the "railroad age." Historians in the enthusiasm born of their theme, have perpetuated the glories of the Golden, and the splendors of the Silver Ages, but neither, with all that can be said, with reference to the advances made in civilization, enlightenment and material development of the world's resources during those

progressive periods, are at all comparable with the wonderful accomplishments that have distinguished the nineteenth century.

It is difficult to realize the fact that when Michigan entered upon her career in the sisterhood of States,—less than ten years had elapsed since Stephenson with the little “Rocket” had demonstrated upon the Liverpool and Manchester Railway, the practicability of its operation with steam carriages, and the movement of cars laden with passengers and freight at a speed of twenty-five miles per hour without hurt or damage to the persons or property transported. In our own country as early as 1825, Col. John Stevens of Hoboken, had constructed a miniature engine, the success of which was demonstrated upon a circular track in front of his residence; it was not until four years later that Peter Cooper, the distinguished citizen and afterwards capitalist of New York City, had placed upon the track of the Baltimore and Ohio Railroad a rudely constructed machine, but able to draw after it a passenger car loaded with thirty-six passengers at a speed of eighteen miles per hour. This last accomplishment supplementing Stephenson’s success upon the other side, left no room for doubt that railroads would in the near future replace all other agencies for inland transportation.

New York, inspired by the foresight and energy of De Witt Clinton, had just completed the Erie canal by which the waters of the great lakes had been connected with the ocean, and the rich and unoccupied area that bordered upon the shores made accessible to the teeming thousands, who, forsaking the mountainous and less fertile regions upon the Atlantic slope, sought new homes where milder skies and more generous soil offered easier and larger returns to the hand of labor.

Among the Territories of the Northwest, Michigan was among the first to feel the impulse given to immigration by the enterprise of the Empire State, and her broad domain, so long reported by trappers and the agents of the fur companies, which at that early day held almost exclusive possession within her exterior borders, as only an extended swamp, swarmed with the hardy pioneers whose resounding axes soon made it evident that they had come to stay. The fiction by which the tide of people seeking their fortunes in the new west had been turned in other directions once dissipated, an inflow of immigration commenced, hitherto unprecedented in the history of the country. The class of popu-

lation that made up the early inhabitants of Michigan was exceptional in enterprise and intelligence, largely from New England and Eastern New York, the founders of our State brought with them habits of thrift and industry, and sharply defined ideas of policies, that could not fail to stand them well in hand in forming the institutions of the new commonwealth, so soon to grow up under their guidance and supervising care. The building of a new State could not have fallen into better or more judicious control. From the first, there was a thorough appreciation of the magnificent possibilities, and a firm determination to carry them to their most successful end. Prominent among other agencies to be relied upon for the accomplishment of such purpose, was the devising and completion of a system of internal improvements, to supplement the advantages already secured by the navigable waters which washed the exterior boundaries of the Territory, and whose fourteen hundred miles of coast, indented with innumerable bays and inlets, furnished the finest of harbors for commerce and refuge, to the shipping already beginning to multiply on the great Northwestern lakes. The successful outcome of the canal system of the Atlantic States had for some years previously given to such method of internal traffic, the first place in popular favor, but with the certainty at last, that the steam locomotive for so long a time almost ridiculed as the wildest of Utopian fancies, had become an assured fact, public sentiment quickly underwent a change, and the demand for the railroad instead of the slow-going canal, everywhere asserted undenied supremacy. Our early settlers exposed to the fever before leaving their Eastern homes, very soon developed out clear cases of the mania for the iron horse, real evidences of which became manifest in our early territorial legislature.

The first railroad charter granted in Michigan was an act to incorporate the Pontiac and Detroit Railway Company, approved July 31, 1830; this was less than nine months subsequent to Stephenson's successful operation of the "Rocket" in England, and before there could be said to be a mile of track in practical use for general traffic within the limits of the United States. Certainly there was none upon which locomotive engines had replaced the horse-power common to the tramways in use to a limited extent during the earlier years of the century. In reviewing the provisions of that first charter it is impossible to suppress a smile as we

read of some of the conditions imposed upon the corporation in the construction of their road. They were generously permitted to use a strip of the United States road, commonly called the Saginaw road, not exceeding twenty feet in width running parallel with the centre of said road from the village of Pontiac to the city of Detroit, but with the following very unusual proviso: "that such railroad should not interfere with the ditches and traveled part of said road," nor pass upon the ground lying between said ditches. Another section provided that such railroad should be so constructed as to admit of the easy and safe passage of wagons, carts, sleds and teams at the points where public and private roads intersected the line of the said Saginaw road. Certainly there was no subordinating the public interest and convenience to the demands of a soulless corporation, in that charter, and one looks through the entire instrument in vain to find that a single franchise was granted beyond that of the right to build a railway; and as to what manner of creature the latter was to be, if we may judge from their legislation, our early lawmakers were in blissful ignorance most wonderful to contemplate. The archives of the State do not indicate that the above mentioned charter was ever utilized; but, all the same, it remains upon the statute book, a silent witness of the fact that our founders fully intended to keep well up with the procession in all that appertained to the material progress of the times.

On the 22d day of April, 1833, an act of the territorial legislature to incorporate the Erie & Kalamazoo Railroad Company became a law. The road of this company was the first to be opened for traffic in Michigan, and among the earliest of any in the United States. The termini of this road were to be Port Lawrence and Adrian, and thence to such point on the Kalamazoo river as should be deemed most proper and useful. Port Lawrence is now known as Toledo, and was then supposed to be within the limits of Michigan, but as the result of the bloodless contest for State supremacy over the mouth of the Maumee, Ohio was confirmed in her claim to the right of possession, and in lieu thereof, Congress generously gave to us the Upper Peninsula, then thought to be only a waste of rock and wilderness, on the solitude of which civilization would long hesitate to intrude. It is hardly necessary to say that what was then deemed a misfortune, has proved a blessing in disguise, and that to-day, six hun-

dred and fifty miles of railway tracks traverse that erstwhile inhospitable region, carrying towards the trade centers of the country the inexhaustible and invaluable product of its iron and copper mines.

The Erie & Kalamazoo railroad was opened for traffic in 1836; it was cheaply constructed upon the plan generally adopted for nearly all of our primitive roads. First, heavy mud sills hewn from the longest sticks of timber obtainable from our almost unequalled forests, were planted in the road-bed. To these were firmly spiked the ties first properly notched to receive the oak stringers, which by means of wedges were secured in position, and chamfered at the upper inside face so as to permit a safe bearing of the car-wheel flanges. To these stringers was spiked a thin, narrow strap rail, weighing not more than six to eight pounds to the yard, easily loosened from the fastenings by the engagement of the car-wheels passing over it; and as experience frequently proved, wonderfully apt to intrude upon the comfort of the passengers seated above by passing up through the car floors and wrecking things generally. Technically, these car inspectors were known as "snake heads." Compared to the solid superstructures to which we are accustomed at the present day, the roadways of half a century ago seem absurd enough; but nevertheless they were "pointed to with pride" by the pioneers of that early period, who firmly believed that when the journey from Toledo to Adrian and return could be made through the hitherto almost impassable recesses of the Maumee swamp in two days, but little in the way of rapid transportation was left to be desired.

For some months after the completion of the road, the cars were drawn by horses, but on the 20th of January, 1837, the Toledo Blade announced the arrival of the long expected locomotive "Adrian,"—No. 80, from the Baldwin works at Philadelphia. It was the third engine to be sent west of the Alleghany range, and the first to the States west of New York bordering upon the great lakes. The commissioners in charge now announced to "emigrants and travelers," that the Erie and Kalamazoo railroad was in full operation between Adrian and Toledo, and that people destined for the west, Michigan City, Chicago, and Wisconsin territory, would save two days and the corresponding expense, by availing themselves of the new thoroughfare.

The owners of the Erie and Kalamazoo railroad also inaugurated the Palmyra and Jacksonburg railroad; and its opening to Tecumseh was celebrated with the enthusiasm usual to such occasions, on the 9th of August, 1838.

Such, in brief, is the history of the inception and construction of our pioneer railroad, chiefly interesting from the fact that it was the beginning of our now extended system of internal improvements, and the first section constructed, of what is now one of the most extensive and prosperous railroad properties in the United States.

The territorial Legislature on the 29th of January, 1832, chartered the Detroit and St. Joseph Railroad Company for the construction of a road from the city of Detroit to the mouth of the St. Joseph river, traversing the counties of Wayne, Washtenaw, Jackson, Calhoun and Kalamazoo, the latter county then comprising all the territory lying between Calhoun and Lake Michigan. Work under this charter was commenced by the company and some progress was made in its construction; but upon the admission of the State to the Union, and the adoption by the Legislature of a comprehensive scheme of public works to be undertaken and controlled by State authority, the Detroit and St. Joseph was purchased, and by legislative enactment, subsequently became the Michigan Central.

March 7th, 1834, the act to incorporate the Detroit and Pontiac Railroad Company was approved, and for a second time a railroad between Detroit and Pontiac was authorized. By this time, however, legislators seem to have become more familiar with the character and requirements of a railroad corporation, and the new charter conceded substantial franchises to the incorporators, which, though often attacked in the courts and Legislature, have remained unimpaired until the present time. In the mutations incident to corporate history, the Detroit and Pontiac is now known as the Detroit, Grand Haven and Milwaukee, and long years since was completed to Lake Michigan, and has become one of the most important thoroughfares of our State.

Some twelve miles of this road was in use for horse-cars as early as 1835, but the first locomotive did not appear upon its track until the autumn of 1838, when a little machine not much larger than a cooking stove on wheels was placed in service and continued to be the sum total of motive power employed for

many years. The early patrons of this road used to claim that on one occasion a citizen of Detroit, who availed himself of its trains to make the journey to Pontiac and back, was so long absent from home that his children grew out of his recollection ; and that it was no rare thing for notes given by persons upon the eve of departure to Royal Oak, or Birmingham, to outlaw before their return.

Charters authorizing the construction of railroads between Romeo and Mt. Clemens, and Shelby and Detroit, were also passed by the territorial Legislature, granting, in perpetuity, franchises of the most liberal character to the persons named in the acts ; such charters, however, were not utilized, and upon the organization of the State government, by common consent, the further work of building railroads seems to have been accepted as among its principal functions.

Probably there has never been a time in the history of our country, when impracticable schemes of internal improvement and extravagant policies for the development of the State's resources, were more likely to meet with favorable consideration than in 1836. The spirit of speculation was rife, paper money "fiat" in character in all that the term implies, was seeking investment, and no enterprise, however grand its proportions, was without friends for its execution.

The first Governor, Stevens T. Mason, was a most enthusiastic believer in the splendid future of Michigan and its ability to carry to successful conclusion systems of internal improvement which would leave nothing to be desired in that particular, and attract to the State an immigration commensurate with the advantages afforded by broad and enterprising policies.

It was already becoming the practice of the Federal Government to donate to the new States liberal grants of lands in aid of the establishment and maintenance of schools and universities, and the construction of works of internal improvement. This State had attached an ordinance to its Constitution, asking Congress for such assistance to build one or more railroads or canals from its eastern boundary to Lake Michigan ; and it was believed that the application would meet with a favorable response in the near future ; a belief realized in the act of Congress, approved September 4, 1841, by the provisions of which Michigan, in common with other Western States, received five hundred thousand

acres of land, the proceeds of which were to be devoted to purposes of internal improvement. Relying upon the probability of such a grant, and the anticipated rapid settlement of the State, Governor Mason in his first message recommended the most liberal legislation for carrying forward an extensive system of public works. But that the State should be in position to exercise at least partial control of the same, he favored the idea of its becoming a large stockholder in such enterprises; and the negotiation of a loan on its faith, in anticipation of resources to be derived from the sales of lands, that might thereafter be granted for internal improvement purposes.

The Legislature fully shared the enthusiasm of their youthful Governor, and entered with alacrity upon the adoption of his suggestions for the development of the new State. A scheme for the construction of three railroads was determined upon, and a loan of five millions of dollars for that purpose authorized upon the credit of the State—these roads severally to be known as the Central, Southern and Northern, extending across the State. The first, from Detroit to St. Joseph; the second, from Monroe to New Buffalo; and the third, from Port Huron to Grand Haven. While during the years of distress and disaster that followed closely upon the era of inflation which so shaped our early legislation, the policy of our first State administration met with popular disapproval as being unwise and extravagant, who, in the light of the present situation, can gainsay the fact, that, after all, at the close of the first fifty years of our history, the estimate then made of the future necessities of our State, for a comprehensive system in the interest of internal transportation, does not to-day stand fully vindicated?

The recommendations of the Governor were practically approved by the Legislature, so far as the works to be undertaken were concerned, but instead of merely giving to the State a controlling interest as a stockholder, it was thought the better policy to build the roads at the entire expense of the public treasury, and to maintain the operation and management solely under the State control. Although it required but a few years of practical experience to change popular sentiment with regard to the question which resulted in the sale of the railroads to corporations chartered for their purchase, and a provision in the Constitution of 1850, which forever inhibited the State from being interested in or engaged in carrying on any work of internal improvement,

still there is to-day a strong sentiment in this State, and most of the others, which may be said to be a growing sentiment, that the public interest would be largely subserved by State control of one or more important lines in a position to fix and enforce transportation rates upon other roads connecting therewith or running parallel thereto. Whether in fact such a control would be in the direction of a sound policy, I shall not discuss upon this occasion, but that it is advocated by economists who have given much thought to a solution of the vexed question of transportation rates and traffic discrimination that are now and for some time past have agitated the country, is alluded to merely to show that the views of Gov. Mason, by him urged fifty years ago, were not so entirely impolitic and unsupported by the logic of a sound economy as many of us have been accustomed to believe. But with five millions of money supposed to be in hand, and liberal land grants from Congress in sight, operations were commenced upon all the proposed works; and for a time everything progressed to the satisfaction of the most sanguine. The Central and Southern roads, traversing as they did the most populous counties, and being on the line over which the westward march of empire was making its way, as was natural, were more favored by the Legislature and the commissioners of internal improvement under whose administration the construction was carried forward. Not a little friction was engendered between the two rival routes, each anxious to outdo the other and to make the fastest progress towards the western boundary of the State. This feeling of jealousy occasionally showed itself in a practical way, and there is a tradition that when the road bed of the Central was ready and waiting for the iron, between Detroit and Dearborn, one of the commissioners residing at Monroe, anticipated the vessel freighted with rails intended for the rival of the Southern, when off the mouth of the River Raisin, and running her about a mile up that stream, had the iron thrown overboard in seven feet of water, and ordered the schooner to return to Buffalo for another load. This sharp practice however, availed the "Independent State" but little. Henry Willis, of ship canal fame, in charge of track laying on the Central, learned of the whereabouts of the iron, took a scow in tow of the little steamer "Ruby," and proceeding to Monroe a few nights after, fished up every bar of the rail, carried it to Detroit, had it securely spiked to the stringers, before the Monroe Commissioner was aware that it had gone.

But it is not necessary to the purpose of this paper that I should continue in detail the progress made in completing our railroad system under the auspices of the State. Upon the Northern line after clearing and partially grading about eighteen miles west of Port Huron, further work was abandoned and attention in that section principally devoted to the completion of what was known as the Clinton and Kalamazoo Canal, a work intended to connect the waters of the Clinton and Kalamazoo rivers, and so save to commerce the then tedious voyage by way of Mackinaw Straits. A few days since, I traveled for some distance upon a railroad car in the dry bed of the abandoned canal, while an old timber dock that we passed hard by, in the last stages of decay, spoke, more forcibly than words, of the changes wrought in fifty years.

Upon the two principal lines work was continued by the State with all the energy that its disordered finances and the general depression that followed upon the speculative period contemporaneous with the admission and first three years of our history, would permit. The fiscal agents charged with the negotiations of the five million loan had failed to realize the proceeds from the parties with whom placed, and what has been so long known upon the State ledgers as the "part-paid bonds," became a legacy for the future to care for. Of the remainder, all but about \$400,000, as stated by the report of the Committee of Inquiry, headed by the now venerable A. T. McReynolds, to the Senate of 1841, had been scattered to the four winds of heaven, and the only available resources left for the prosecution of the public improvements were warrants payable in internal improvements lands, and worth in market from thirty-five to sixty cents on the dollar. Truly, Michigan at that low ebb of her financial fortunes, might have anticipated for her own the legend of the Kansas Great Seal, "*Ad astra per aspera*," with a touching regard for the "eternal fitness of things."

But with characteristic persistency work was continued upon the roads in the face of every discouragement until in 1846 the Central had been completed to Kalamazoo, and the Southern to Hillsdale. Early in the session of the Legislature for that year a syndicate of Boston capitalists, through their agent, proposed to the State authorities the purchase of the Central road. The proposition was favorably received by the Legislature to whom it

was referred by the Governor; and a bill chartering the Michigan Central Railroad Company, and providing for the sale to it of the Michigan Central Railroad for the sum of \$2,000,000, in due time became a law. Inspired by the enterprise of the Boston people a number of gentlemen, for the most part residing in Monroe, in this State, came to the Legislature with a proposition to purchase the Michigan Southern. The proposition was favorably entertained by that body; and a law passed disposing of the road, the price to be paid for the property being five hundred thousand dollars. The companies, chartered in connection with the sale, were promptly organized, and the roads transferred to the purchasers; and from that time Michigan has left the building of railroads within her borders entirely to private enterprise.

When the State disposed of her railroads there were remaining unappropriated nearly one-half of the lands granted by Congress for their construction. These lands had been selected from the public domain with special reference to their value for their timber and agricultural purposes; and without doubt in these qualities were unexcelled by any equal area in the State. Had a wise policy prevailed, no disposition would have been made of the residue of the grant until, in the course of years, sales at increased value would have returned millions of dollars to Michigan's exchequer. As it was, improvident legislation that no remonstrance of faithful and far-seeing executives could avert, appropriated the lands for every wild scheme that ingenuity or stupidity could devise; until, in a short time, what should have been held as a most valuable reserve for the benefit of the State at large, was squandered and "frittered away," in most instances, to no permanent usefulness whatever.

With the acquisition of its property the Michigan Central railroad company at once commenced the extensions and improvements that have made it the chief railroad property in our State. Under the most able and energetic administration of John W. Brooks, its first general superintendent and chief engineer, its east terminal at the Campus Martius in Detroit was transferred to the foot of Third street, and the splendid river front which now gives the Central its unequalled dockage and ware-house room, was built up from the bed of the river. The old line was relocated and reconstructed along its former tortuous course up the Huron Valley, relaid with heavy rail to Kalamazoo; and in the

spring of 1849, the locomotive for the first time roused the echoes among the dunes of Lake Michigan.

The Southern company, lacking in financial ability, were less prompt in carrying out the engagements required by its charter; and it was not until after much supplementary legislation and an almost entire change in corporate ownership, that work was at last commenced in good earnest. From that time the strife between it and its old rival, for the first entrance into Chicago, waxed very warm; and so close was the race that both crossed the corporate limits of that city, within a few hours of each other, in May, 1852.

Soon after, the other of the first trio of Michigan railroads resumed the work of extension; and November 22, 1858, the Detroit and Pontiac, re-christened as the Detroit and Milwaukee railway, ran its first train into Grand Haven, and Governor Mason's prophesy that within twenty-five years from the admission of the State three railroads would cross its territory from east to west, met with fulfillment.

From that time on, the growth of our railroad system has been one of steady progress, always a little perhaps in advance of the development of the State, but aiding materially to that end. While our legislation has not permitted our municipalities, as in many States, to bankrupt themselves in recklessly issuing their bonds in aid of railroad schemes, still so liberal and conservative has been its character in the granting of franchises, and the limitations of privileges in the case of railroad enactments, that capital has rarely been lacking for the construction of any really needed work.

The Michigan Central Railroad Company, with thirty miles of track February 5th, 1838, on the 31st day of December last was operating within the limits of this State 1020.34 miles. The Lake Shore and Michigan Southern (the old Erie and Kalamazoo of 1837), with thirty-five miles of track, at the close of last year was operating in Michigan 576.10 miles.

The old Detroit and Pontiac road, with only 25 miles of track in 1844, is now but the smallest section of the Grand Trunk of Canada system, which controls and operates within the limits of our State, 577.96 miles of road.

The entire miles of track in the State January 1st, 1886, were 5,220, belonging to sixty different corporations, under thirty-four separate managements.

The amount of stock in these companies held in Michigan January 1st, 1885, was reported at \$10,758,760.71; their total indebtedness \$345,787,796.36, or \$30,231.51 per mile; their total stock and debt was \$624,580,650.67, or \$54,348.52 per mile; their total cost for Michigan, \$222,194,232.28; the total income for Michigan, was \$26,847,797.76; total operating expenses, \$19,956,786.32. Total passengers carried, 24,782,322. Total tons of freight moved, 36,479,844. Total freight forwarded from Michigan stations, 12,575,793 tons. Average rate per mile for passenger fares, 02.539 cents. Average rate per ton per mile freight carried, 000.904.

The companies for the year 1885 paid into the State treasury taxes amounting to the sum of \$634,817.28.

Within the limits of the State there were at the date of the last reports to the railroad department, 1,059 railroad stations and 20,030 employees. Our railroad lines extend into every county of the lower peninsula, save seven; and of that at first despised Upper Peninsula, not a single county is now without railroad facilities. In addition to the six roads that practically run across the State from east to west, two meridian lines extend from our southern boundary to the straits of Mackinaw; while shore lines along the lakes that wash either border, are rapidly extending northward to the same terminal.

In the construction of this comprehensive system of railroads, congressional grants of 3,656,936.78 acres of land have been conceded; to which the State has added 1,595,840.66 acres more of swamp lands, making a grand total of 5,252,777.44 acres received by our railroad corporations, the proceeds of which will go far towards meeting the cost of at present unproductive roads.

Michigan at the close of the first half century of her political history, in all that goes to make a State prosperous and wealthy and its people contented and happy, may most justly claim to be the peer of any in the Union. Foremost among the causes that have led up to this felicitous result, is the rapidity with which her material resources have been developed through the instrumentality of her railroads. By a constant recognition of that fact, and the enforcement of the legislative policy which seeks to protect the interests of capital alike with that of the people whom it serves, its continued investment in our railroad properties may be expected, and their permanent usefulness assured.

A BRIEF SKETCH OF THE COMMON SCHOOLS OF MICHIGAN AND OF THE STATE NORMAL SCHOOL.

PROF. J. M. B. SILL.

I am asked to contribute two brief sketches, one outlining the history of the common schools, and the other a similar paper on the State Normal school. The limits of time and space prescribed to me, forbid anything more than a condensed statement of what seems to be the salient facts in the history of these State institutions. There is no room for much in the direction of inferences or suggestions.

The term "Common Schools" means all the free public schools of the Commonwealth, supported to a greater or less extent by a common public fund, and devoted to the primary and secondary education of the youth of the State.

Thus the term includes not only the isolated country schools, but also the Union and High Schools of the cities and villages, and the extended systems of free public education, sustained and supported in all our towns of any considerable size.

They are *common* schools because they are common ground where all, whether rich or poor, may meet on a standing of perfect equality; they are institutions wherein in the seeking of a common benefit and in the pursuit of a common interest, distinctions of race and sect, however bitter and sharply drawn, ought to be and are forgotten, and the youth of diverse and even unfriendly sects and nationalities are, by the very nature of their association, trained to a fraternal regard and wholesome mutual respect.

The common schools and the Normal school are fitly united in these sketches. The latter is an outgrowth from the necessities of the former. The chief educational thought, the grand aim of the State being the advancement of her youth in intelligence and in the knowledge essential to good and useful citizenship by means of her common schools, the Normal school was established to render these more efficient in the performance of the great work assigned to them.

The first requisite of good elementary instruction is a sufficient supply of earnest, devoted and intelligent teachers, and to meet this want and to secure to the common schools their highest measure of efficiency, the Normal school was established and has been cheerfully maintained by the State.

Indeed, so close is the connection between the subjects of these sketches, that most authorities class normal schools as a mere division of common schools. I shall first treat of the common schools.

THE COMMON SCHOOLS.

First,—as to their resources:

In 1785, shortly after the general government had taken possession of the vast area of unoccupied lands lying west of Pennsylvania, north of the Ohio river and eastward from the Mississippi, one thirty-sixth part of this entire Northwest Territory was set apart and reserved "for the support of public schools," and the Ordinance of 1787 for the government of the same territory, affirmed this grant or reservation by declaring as follows: "Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall be forever encouraged."

An act, also of the Congress of the confederation, dated in 1804, making provision for the sale of lands in Indiana Territory comprising the present States of Indiana, Michigan, Illinois and Wisconsin, again confirmed this dedication by expressly reserving from sale section No. 16 in every township for the support of schools.

When the Territory of Michigan was organized in 1805, comprising at that time the lower peninsula of this State, and also a narrow strip of land on the northern border of Indiana and Ohio, there was a further confirmation of the grant for school purposes secured by the acts mentioned above; and in 1828 Congress placed these reserved lands under charge of the Territorial Governor and Council to care for them and to take measures to make them productive of an income for the purposes intended in the grant. Further, the Ordinance of 1836 admitting Michigan as a State into the Union, declares that "Section No. 16, in every township of the public lands, and where such section has been sold or otherwise disposed of, other lands equivalent thereto, and as contiguous as may be, shall be granted to the State for the use of schools."

Of late some doubt has been thrown upon the motives of Congress in making this beneficent grant. It has been questioned whether it was not a desire to render the public lands salable to

settlers, and so to make a way for the payment of the public debt, rather than a high sense of the value of popular education that prompted the gift. It is true that the close of the war of the Revolution found the General Government almost hopelessly encumbered with a great debt incurred in the exhausting though heroic and brilliantly successful struggle for independence; that to the means for the extinction of this debt which was paralyzing the ambition and barring the prosperity of the new nation, the statesmen of the infant republic were directing their anxious thought and their most earnest endeavors.

But there ought to be little sympathy with any attempt to ascribe to human action any motive lower or meaner than the best and highest that will fully explain and account for it, and, certainly, we can afford to judge these patriotic men by the explanation which they themselves make in the famous declaration already quoted from the Ordinance of 1787. Even if it be granted that members of Congress had in view nothing more than enhancing the value of the public lands and making them more desirable to settlers, this act showed a quick appreciation of the fact that the American people set a high value on universal education, and they recognized this in granting what, of all things, would make such lands most desirable to settlers, viz., a provision for perpetual aid to common schools.

Certainly they were steadfast in the liberal policy first inaugurated. The brief account which I have already given of the history of these dedicatory acts, shows, to the last, no variable-ness nor shadow of change in the wise and philanthropic policy first formulated in the Ordinance of 1785.

In considering this first grant for the support of common schools, it is hardly necessary to say that the uniform method of survey of public lands lays it off into townships six miles square. This is the largest division of land known to the survey. Each township is subdivided into thirty-six sections, each one mile square, and containing six hundred and forty acres of lands. These sections are numbered consecutively, and section No. 16 is, as nearly as possible, the central section.

The matter of the location of the section reserved for support of schools is significant. Why a central section was fixed upon becomes evident in view of the wording of the Ordinance of 1785, which prescribes that there shall be reserved from sale the lot (sec-

tion) No. 16 of every township for the maintenance of public schools *within said township*.

It is plain that it was the original design of Congress to apply the moneys acquired by the sale of lands in each section 16 for the benefit only of the township in which such section was situated.

When Michigan sought admission to the Union, she profited by the experience of some of her sister States. They had taken the grant of land for school purposes under the formula of the Ordinance of 1785 as quoted above. There were many difficulties in the way of such an administration of the trust; the chief one being that the sections numbered 16 differed immensely in value. Some of them were of sufficient value to afford a magnificent fund for the support of the schools in the township of which they were a part; others being of little or no value for this or any other purpose.

The proposition in reference to primary school lands made by the people of the proposed State to Congress, has already been quoted in this paper; and it subsequently became a part of the ordinance admitting Michigan into the Union. It will be seen that the State took jurisdiction of these lands for the benefit of popular education, not in the several townships in which the sections were located, but in the State as a whole. Of the wisdom of this alteration of the original plan of Congress, there can be no doubt. F. W. Shearman, then Superintendent of Public Instruction, in his valuable report for 1852, speaks of it as follows: "In taking the grant to the State, it avoided a multiplicity of officers otherwise located in different counties; it contributed and is still contributing in an unexampled manner to the education of all the youth of the whole State; it has saved many townships from asking legislative aid, where the school section was unavailable, either from prior location by actual settlers, or where the section was covered with heavy timber, which prolonged the event of its being cleared for many years; and in many instances, saving not only time, labor and expense, but the means of education itself to the inhabitants of those townships where the section was entirely unavailable from natural causes, and relieving the inhabitants in such cases from the management of equivalent sections at a distance from their townships."

"In taking the grant to the State, there was a higher principle

of equity involved in the relation to the whole people than would have obtained, had Congress refused to assent to the terms demanded in the ordinance of the (State) convention. If the original faith of Congress might be considered as pledged to the township, previous to the adoption of our Constitution, the inhabitants by their votes in adopting that instrument, decided in favor of a consolidation of the fund and its management by the Legislature for the common benefit of all the townships. Nor was such policy rendered less sound by the adoption of a system which avoided the repeated applications to Congress which have arisen in other States, and which left all questions connected with these lands to be settled by Congress and the State in its sovereign capacity, rather than by township jurisdictions, subordinate in their will and power, to the higher and more general interests of the whole people."

The present condition of the Primary School fund and the history of its helpfulness to free education in our State, are a splendid and enduring memorial to the far seeing wisdom of the men who framed this proposition to Congress and gained its assent thereto. All the States since admitted have seen the wisdom of adopting the plan first devised and put in practice in Michigan.

It is worthy of note, as showing the estimation in which free elementary education is and has been held both by Congress and by the people of this State, that all the grants of Congress, as well as the ordinance of the Constitution which submitted propositions for admission to the Union, speak of Section 16 as reserved for the maintenance of "Schools" or of "Public Schools," never specifying elementary schools; and yet universal consent has construed these words to mean only common or primary schools. And upon this accepted construction all subsequent legislation has been based. There has been no flinching or wavering. Higher institutions of learning are certainly schools, and if supported by the public, they are public schools; but, to this day, no serious attempt has ever been made to divert the fund to the support of anything but common schools maintained for the advantage of all the people. The promoters of universities and other institutions of advanced learning, have never attempted under any technical construction to take a dollar from the fund arising from the sale or use of the sixteenth section dedicated, in the minds of its grantors and trustees, to the work of the popular education.

The area of land which is thus held by the State in trust for the primary schools amounts to nearly 1,100,000 acres. Soon after this grant came under the control of the State it was a matter of much discussion whether they should be leased or sold in order to secure a permanent income from them. In the end wise counsels prevailed. It was seen that the State could hardly make itself a landlord to an army of tenants, and take upon itself the task of attending to conducting a business so immense and yet so minute and exacting in its details. Accordingly it was decided that the lands should be sold and that the money received from the sales should be invested in a perpetual fund, the interest only of which should be devoted to the use of the primary schools.

In 1837 the Legislature passed a law authorizing the Superintendent of Public Instruction, an office recently created by the Constitution, to sell lands by auction to the amount of one and one-half million dollars, the minimum price being \$8.00 per acre, the terms of payment being one-fourth at the date of sale, and the remainder being in annual installments of five per cent., commencing five years after purchase; the unpaid balance bearing interest at seven per cent.

The sales thus authorized began in July, 1837, and within a little more than five years they amounted to more than seven hundred thousand dollars, at an average of about \$12.00 per acre. This, it will be remembered, was in a time of inflated credit, fictitious values, and magnificent expectations, but before the five years had elapsed the collapse came and the fund had already suffered grievously. In many cases the remaining three-fourths of the purchase price was claimed to be in excess of the actual value. Many who had made valuable improvements on the lands purchased, yielded to the pressure of hard times, and submitted to forfeiture because they could not meet the annual interest.

In 1840 the minimum price was reduced to five dollars per acre, and the time for the payment of the principal extended indefinitely; but this relief was claimed to be entirely insufficient, and the purchasers again clamored for further concessions. In 1842 the Legislature yielded again to the demands of those who desired to be relieved of the obligations to which they had voluntarily bound themselves. These demands were extraordinary in their nature, but were finally agreed to, and it was provided that, on

application of the purchaser, the associate judges should examine any school lands purchased at \$8.00 per acre, or over, and appraise its value in its actual condition at the time it was first bought, provided, that the reduction should not exceed forty per cent. of the original price. The difference between the appraised value and the contract price was to be credited to the purchaser.

The following figures show the sudden creation of the school fund and its no less sudden collapse between the years 1837 and the close of 1842:

Whole amount of sales including forfeited lands re-sold, and amount paid on lands previous to their forfeiture.....	\$739,638.01
Deduct on account of forfeiture, reduction through new appraisal, and other losses.....	379,828.60

Actual amount of fund in December, 1842.....	\$359,809.41
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The condition of this fund at the close of the fiscal year 1885 was as follows:

In the hands of the State.....	\$3,184,190.01
Due from purchasers of lands.....	293,155.69

Total of the primary school fund.....	\$3,477,345.70
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This is a total increase of \$3,117,536.29, or an average annual increase of \$72,500 since 1842.

At first the policy of loaning the moneys belonging to this fund to individuals was adopted by the State. This policy was soon abandoned; but it survived long enough to cause a loss of nearly \$12,000 to the fund. For many years a wise plan had been in operation in the investment of this fund and also the Swamp Land fund, of which some account will be given further on in this paper. As fast as the fund accumulates it is placed in the State Treasury and forms a perpetual loan to the State, and the faith of the State is pledged for the annual interest at the rate of seven per cent. Not only does the State pay interest upon moneys which have come in the treasury, but it assumes and guarantees the payment of all interest due from those purchasers who have paid but a part of the price agreed upon for school lands. Thus the fund is safe beyond all peradventure, and the wants of the schools are met by prompt payment of all accruing interest. This interest, formerly distributed once in the year, is now paid semi-annually to the several counties in amount proportionate to the number of persons between the ages of five and twenty years,

residing in each county, as shown by the school census, taken by authority of law in the autumn of each year.

This fund, known as the Primary School Interest Fund, receives some small additions from time to time, which are due to a provision in the Constitution as follows: "All lands, the titles to which shall fail from a defect of heirs, shall escheat to the State; and the interest on the clear proceeds from the sales thereof shall be appropriated exclusively to the support of Primary Schools."

Another and vastly more important and extensive addition to this fund became available first in the year 1881. This addition is due to the provision to be found in Section 1, Article XIV. of the Constitution: "All specific taxes, except those received from the mining companies of the Upper Peninsula, shall be applied in paying the interest of the Primary School, University and other educational funds, and the interest and principal of the State debt in the order herein recited, until the extinguishment of the State debt, other than the amounts due to educational funds, when such specific taxes shall be added to and constitute a part of, the Primary School Interest Fund."

At the January term in 1881, the Supreme Court of Michigan, upon an amicable application for an interpretation, decided that the time indicated in the Constitution had arrived, inasmuch as the State debt, some portions of it not maturing until 1890, though not actually paid, was fully provided for in a sinking fund, made up of unused accumulations of the specific taxes, and decreed that "any excess, apart from what shall be annually required to meet the annual interest accruing on the debt, must be held applicable under the Constitution, so long as there is no failure in the fund for the payment of the principal, to the Primary School Interest Fund, and ought to be assigned thereto."

Under this decision the specific taxes for each subsequent year, have first paid the interest on the unmatured debt, and on the educational funds, and the remainder has been divided among the counties as a part of the Primary School Interest Fund. On account of this large addition to the moneys available for distribution the amount per capita to each person of school age, was, in the spring of 1881, the first year in which the surplus of specific taxes became available for school purposes, \$1.06 against 47 cents in the year next preceding; an increase of more than one hundred and twenty-five per cent.

The annual per capita arising from the interest of this fund had, in years previous to 1881, never exceeded 50 cents for each person of school age, and the minimum amount was reached in 1845, when it was only 28 cents. Before the addition of the surplus of the specific taxes in 1881, the annual additions through sales of land, had ceased to keep pace with the increase of the school population, and it had already fallen from its yield of 50 cents per annum in 1878 to 47 in 1880.

Future accumulations to the original School Land fund will doubtless be slow and uncertain. It seems difficult to make any safe estimate as to the probable enlargement of the fund arising from this source. Superintendent Gregory's estimate of the possible maximum amount of the fund, made in 1859, was \$4,868,022, which he, apparently fearful that the future would fail to justify his calculations, took prompt occasion in the next paragraph, to reduce to \$4,000,000. If his last estimate was a safe one, the present margin of possible increase is only \$522,645.00. But the specific tax resource is not likely to decrease, and after the actual extinction of the State debt, the amount which now goes to the payment of interest will be added to the amount distributable for the support of schools. I have dwelt, perhaps, disproportionately upon the history of this fund, because it is, as Supt. Shearman in the report heretofore alluded to, says, "the foundation upon which the educational structure of Michigan * * * was laid." The amount of the income it has yielded is large, though it is insignificant when compared with the total cost of common school education in our Commonwealth, and stands in the relation of a small percentage to the amount for which the people of this State have freely taxed themselves in behalf of the schools; but it has been exceedingly helpful at the times in which it was sorely needed. It has given courage to the fainting hearts of the friends of education in periods of deep discouragement and despondency. The little that it was able to do, was enough to educate the people up to a profound appreciation of the value of popular education. Without it, education, in this State, could never have made the substantial triumphs and the magnificent progress which its history records, and of which we are so justly proud to-day. With it we have come to a point where the failure of any permanent educational fund could have only a temporary effect upon the prospects of our schools. The men and women of the present generation

are now thoroughly indoctrinated in their faith in the inestimable value of universal intelligence. Whatever should be the cost to themselves, they will not withhold from their children the benefits and advantages which they themselves have enjoyed.

Another fund for the support of common schools is what is known as the Primary School Five Per Cent. fund. This fund was created by the act of 1858, providing for the sale of the State swamp lands, which directed that one-half of the moneys received from the sales of such lands be disposed of in the same manner as the fund derived from the sale of the school lands, except that the State shall pay five instead of seven per cent. interest.

This fund has been available for school purposes only since 1863. In that year the fund amounted to \$109,715.42, the income therefore being \$5,485.77. In the year 1885 the fund had increased to \$361,382.57, yielding an income of \$18,069.12.

These two, the Primary School fund and the Primary School Five Per Cent. Fund are the permanent resources of the common schools. The additional moneys needed and expended for their administration come from other sources, as follows :

Ist. Township School Taxes :

From the time the school system of Michigan was first organized until the present date, a township tax for the support of schools has always been levied. At first it was required that it be a sum equal to the township income from the Primary School fund. An amendment in 1841 gave, to the electors of any township, authority to raise for the support of schools any sum not exceeding one dollar for each person of school age in the township. In 1843 another amendment provided that for 1845 and annually thereafter the supervisor in each township should assess for the support of schools one mill on each dollar of the total taxable valuation. This act, as well as the original one mentioned above, was mandatory. This tax was changed as follows : In 1851 to two mills, in 1853 to one, in 1859 to two, and in 1879 to one mill on the dollar. No changes have been made since the date last named.

The jealous interest of the people in respect to their schools, is emphatically recorded in the law as to township levies, which prescribes that " The Township treasurer shall retain in his hands out of the moneys collected by him, after deducting the amount

of tax for township expenses, the full amount of the school taxes on the assessment roll, and hold the same subject to the warrant of the proper district officers." Thus nothing except the payment of township expenses is allowed to interfere with the receipt by the school authorities, of the whole amount of school tax assessed. Under this law failure to collect any portion of the tax levied on the township can hardly affect the portion allotted to the support of education. The schools take precedence of the demands of the county and State. The requirement on supervisors to assess one mill (sometimes two, as shown above), on the dollar of the total valuation of taxable property in each township was formerly in defiance of the plain letter of the law, evaded by that officer in many townships. As shown by the reports of the State Superintendent, this tax in 1845, the first year in which the law was in full force, yielded an income of \$5,521. The yield of this tax in 1885 was \$679,279.75.

2d. Resources arising from direct taxation.

The first enactment looking to the establishment of common schools, was made in 1827, nearly ten years before the admission of Michigan to the Union. This act provides for the raising of school revenues by district taxation; and this general plan was adhered to from that day to this. The power to levy such taxes has been much modified by legislative enactments, but it has survived all changes, and has been, from the beginning, the source of by far the largest revenues which the people have applied to the establishment and maintenance of the common schools. For instance, the report of the Superintendent of Public Instruction for the year 1885, shows that of the money raised for school purposes, the amount of \$2,700,030.23 came from this source, against \$1,384,943.59, the sum yielded by the township mill tax and the primary school fund combined, and against \$1,963,319.10 received from all other sources. Superintendent Gower's report for 1879 shows the relative yield of the various sources of revenue for the school year 1868-9 as follows: District taxes for all purposes, \$2,049,755.29 against \$723,396.36 coming from the two-mill tax and the primary school fund combined, and against \$1,029,802.67, received from all other sources. In this year it must be remembered that the township assessment was two mills on the dollar, instead of one mill in 1884. In the early history of schools, the power of districts to raise money for school pur-

poses was closely limited. In late years, repeated amendments to the law gave the electors of districts almost unlimited power in this direction. It was found, however, that rivalry between districts, and the zeal of the people for schools and for costly buildings in which to operate them, not unfrequently outran their discretion and their financial ability. Unwise expenditures in behalf of the schools, had their natural effect, and a strong reaction, dangerous to progress in education, set in. These facts led the Legislature of 1875 to set narrower limits to the power of taxing of districts. The restricting amendment of 1875 remains in force at this time. It limits the power of districts to levy taxes for the purchase of sites and the erection of buildings in any one year as follows: Those having less than ten children of school age (between the ages of five and twenty years) are limited to \$250.00; Those having between ten and thirty children to \$500.00; those having between thirty and fifty children of said age to \$1,000.00.

For other purposes of the schools, excluding the amount required for wages of teachers, fuel, or other incidental expenses, the amount raised must not exceed one-half the amounts mentioned above. The amount which each district may raise for payment of teachers, fuel, and other regular incidental expenses, is not limited by law, except that districts having less than thirty children of legal school age, must not raise a sum exceeding \$50.00 per month, for the period during which school is held in such district. This last levy is, under the present law, determined by the district board. The amount of all other district school taxes being determined by a vote of the electors at an annual school meeting held for this and other purposes.

3rd. For many years preceding 1869 a portion of the funds, enough to make up all deficiencies in the current expenses of the common schools, not provided for by the means already described, was raised by a tax upon parents and guardians of the children that attended school. The proportion of this tax payable by individual patrons of the schools was determined by the number of days of attendance of the children sent by them.

The law provided for the collection of this tax by severe measures, including distress and sale of property. For many years the rate-bill was perhaps the most serious obstacle in the way of the success and progress of the schools. It is plain that no system of public schools can flourish under such a regime.

Schools conducted on this plan, will perhaps have a fair attendance at the opening of a term, and so long as the funds provided by the public were sufficient to maintain them, but they can hardly survive the exhaustion of such funds.

In such cases, there was uncertainty as to what amount the rate-bill might call for. Poor men could not afford to send their children longer, and sordid and avaricious men would not ; so children began at once to be withdrawn. Then came the inevitable panic, because as numbers decreased, heavier and heavier expenses must be met by those remaining. As a consequence, studies were sadly interrupted and, in many cases, the schools were broken up long before the date agreed upon for closing them.

This matter of rate-bills was the crowning discouragement of all friends of education.

The State Superintendents regularly in their yearly communication, pointed out to the people and the Legislature the hopelessness of anything like genuine prosperity under such a condition of affairs, and burdened their annual reports with unfailling lamentations over the mischief and the useless waste entailed by the rate-bill system.

The Constitution of 1850 recognized the evils of such a method in the conduct of the schools and required the Legislature to provide for free schools, at a date not later than 1855 ; but for reasons which are difficult now to understand, legislative action on this most important matter was deferred for fourteen long years after the expiration of the time set by the Constitution ; and not until the year 1869, were the rate-bill laws repealed and the common schools made truly and absolutely free. Thus, at last, and after much tribulation and contest against opposition, Michigan took her stand with those who believe education to be one of the inalienable rights of man ; that the highest safety to the State lies in the intelligence of her citizens ; that it is right, in self-defence, if upon no higher ground, to tax property in order to add to the value of man. Thus she gave good, plain recognition to the principle that the child belongs not only to the parent, but to the State as well ; to the parent in an especial manner in its earlier years, while it is still within the jurisdiction of parental control, but to the State almost exclusively by-and-by ; that she has the right to protect the reversionary interest in the coming citizen, and to have something to say as to the kind and amount of pre-

paration for useful and loyal citizenship which must be made in the period of childhood and youth, if made at all ; and that as a future, responsible member of society, the child has rights which neither the poverty nor the avarice, or indifference of parents can justly defeat, and whose demands it is the duty of the State to provide for, at the common expense.

Making the schools free to all, is a long step in the right direction. This policy at least removes the chief obstacle to universal education, and leaves the parent who willfully defrauds his child of his most valuable inheritance, and the State of her undoubted right to intelligent citizenship, with but a slender excuse for so great a wrong.

In other words, the establishment of free common schools, to be maintained at the common expense, tenders to all the opportunities for acquiring an elementary education. It opens the doors to all ; it freely invites all ; but it is the unquestionable right of the State to go further than this. She may not only say to the citizen, "I offer you the means of the free education of your children. The school-house doors are open to all. If poverty bars the way of progress in intelligence to any, I have broken the barrier down. The property of the commonwealth, receiving its compensatory benefit in the safety and security which spring from the intelligence of the great mass of citizens, and from progress in culture and in the arts, shall bear rightfully the cost of the education of your children." But the State may go further, and say, "Having offered these advantages, I demand that you shall, for the good of your children and for the security of society take proper advantage of them. The right to levy taxes for the support of schools can be justified only on the ground that they are necessary to public safety and well being, and this right includes the right to require attendance upon them. Your children are your own, but they are my wards as well. They are peculiarly yours in infancy and childhood, but in the rush of years, the day soon comes, when they are yours no longer, when they belong to the State and to the world, and when, if they are ill-prepared for the duties of life, if they are ignorant and depraved, the curse falls not on you alone, but on society at large."

Later legislation has taken this more advanced ground. I refer to the compulsory attendance laws which require the parents and guardians of children between the ages of eight and fourteen

years, to see that such children have at least four months of attendance annually upon the public schools, or an equivalent in study at home or in private schools. No serious effort has yet been made for the enforcement of these laws, and there are undoubtedly serious difficulties in the way of such enforcement. It is a problem, yet to be worked out, in western states; but its solution must come, for it is vitally connected with the welfare of the republic. Here and elsewhere, illiteracy is gaining ground. The people must see to it that the downward course is checked, or free institutions will be put in deadly peril, and ultimately perish.

As I have intimated above, compulsory laws are, in this State, a dead letter. Is it not time to vivify them? Is it not time that a thorough and vigorous campaign in behalf of general education be begun and carried on, until the strongholds of ignorance are taken by storm? Is it safe to open our doors to all creation, and invite all creation to make itself at home with us, and offer great inducements to it to accept the invitation, unless, at the same time, we compel at least a moderate degree of intelligence to be acquired by our citizens of foreign birth?

The census of 1880 shows that Michigan brought the ranks of native born illiteracy down to the extent of two and one half thousand in the decade just preceding 1880, but that in spite of this decrease there was a net increase as stated above.

The existence of this law among Michigan statutes, and the discussions that have attended its enactment, and the amendments to it hitherto made, have called attention to this subject, and so, even in the interval of failure to execute it, have been productive of some good; but a law too long disregarded, falls into popular contempt. It will be indeed unfortunate if this law is allowed to lapse into this condition. Much is to be done before its enforcement can be secured. It will be obliged to meet opposition from the greed of manufacturing corporations, which sometimes, in their employment of children of tender age, subordinate every interest to the solution of the problem of cheapness of production; from the indifference and selfishness of depraved and ignorant parents; and from those, also, whom pressing and urgent daily want seems almost to compel to the coining of the health and future happiness of their offspring into the means of meeting the merciless necessities of to-day.

It must also meet the hostility of those who, in a false spirit of

exaggerated American independence, will insist that in the execution of such a law, the State is interfering with their rights to do as they please with their own, forgetting that the State and the child both have rights, the one to decent, intelligent and progressive citizenship, and the other to an opportunity to make the most of the gifts which the good Father has given him.

No other view of the limit of the rights of the parent is tenable. The parent has no right to starve his child, or cripple or dwarf his material organs; and should he attempt such a policy, society would at once interfere in a way to be understood and remembered. Nor has he any better right for his own interest or for the advantages of present convenience, to imperil his child's moral and intellectual future, and to dwarf his spiritual life in its tender beginnings.

There is much to be done, much prospective cost in money and in effort. It must be provided that there be room for all in the schools, and that the force of teachers be sufficient for the instruction of all. This means a very considerable outlay, especially in the cities. There must be efficient and fearless officers, charged with the duty of a thorough enforcement of the law.

Complaints against offenders must not be left to the neighbors of those who break the law. Society must also step in to the help of those who are too poor to take the whole burden.

It is a project of great magnitude, but it is also a project whose importance it is almost impossible to overestimate.

Illiteracy with its attendant evils and dangers, can be greatly reduced, if not totally wiped out; but nothing less than persistent and untiring effort can secure this beneficent result. It is not too late yet to do much towards the accomplishment of this end before the end of the present decade.

We owe it to the good name of Michigan that the census of 1890 shall show a better state of things. We cannot afford that one in every forty-three of our native born citizens above ten years shall be unable either to read or write.

In addition to the sources of increase already noted, there are two others which require mere mention. One of these is what is known as the dog-tax. There is an assessment made on the owners of dogs. The moneys thus raised are devoted, first, to the establishment of a fund for settlement of claims for damages sustained by owners of sheep by reason of having such sheep killed

or wounded by dogs, and the surplus, under certain limitations, are apportioned among the several school districts of the township in which taxes are levied.

The portion of this tax applied to the support of common schools, has, in some years, reached a considerable amount. The reports of the Superintendent usually combine this account with several others, but the amount separately reported in 1867 was \$25,812.92.

The remaining resource of the common schools is the tuition paid, mainly in the cities and larger towns, by children of non-resident parents. This, in the year 1885, amounted to \$50,023.72, as reported by the Superintendent of Public Instruction.

I have used much of the whole space allotted to me, in detailing the resources of the common schools, in order that I may be able to draw a sharp line between the two great sources of income which have made possible their establishment and their continuous maintenance.

These resources may be classified thus:

First. Moneys received from land grants, and second, moneys raised from the taxes levied upon themselves by the people of the State.

The people of Michigan are not entitled to any considerable amount of credit for the first.

They have shown much wisdom and some folly in their method of caring for this trust, but the trust itself is in the nature of a gift, and has not come directly from the pockets of the people.

But the second source of revenue shows what the people have done, and are willing to do for their common schools.

In the year ending September 1, 1885, the total expenditures for common schools in Michigan was \$4,728,940.54. Of this amount \$261,190.32 came from the income of the land grants, and all the remainder, viz., \$4,467,750.22, was, in one form of taxation or another, paid by the people and the property of the State. In other words, for every dollar coming from the land grants, Michigan taxed herself more than \$17. In still other words, the schools received from the land grants a little more than five per cent. of their cost for maintenance; and the people paid something more than 94 per cent. of the sum required.

It is not practicable, with the data at hand, to make a similar comparison for the entire time covered by our existence as a

State; but I am satisfied that the proportions for the whole fifty years would not differ very materially from those shown for 1885.

The figures for a few years taken at random and at considerable intervals, justify such a conclusion. For instance, the showing of the years 1864-1873 inclusive, is as follows: The total expenditure for these years was \$21,237,879, and of this \$19,614,300—or nearly 93 per cent., was the yield of taxation in one form or another, and the remaining \$1,623,579 came from the income of the land grants.

In the year 1874 the income of the land grants yielded about six per cent. of the means used in defraying the expenses of the schools; and in 1876 the amount realized from this source was less than six per cent. of the total expenditure.

In this connection another point is worthy of notice. Of course the amount realized on the proceeds of land grants depends on two factors: the amount of the fund drawing interest and the percentage thereon which the State chooses to pay. If the people of the State, through their representatives, elect to pay a larger sum in interest for the use of the school funds in its hands, than it would need to pay on its bonds in the open market, the excess over current rates thus paid, ought to be credited to the good will of the people, rather than to the land grants themselves. Now the State pays seven per cent. on the proceeds of the sale of the Primary School lands, and five per cent. on money received from the sale of one-half of swamp lands. That is to say, on 90 per cent. of the school trust funds, the State pays seven per cent. interest for the support of schools, and on ten per cent. of such trust fund, it pays five per cent.

On this showing, is it an exaggeration to say, that something like thirty per cent. of the amount of the income supposed to be derived from the permanent funds belonging to the primary schools, is, in fact, raised by taxation, and is, really, a gift of the people of the State, to promote the interests of the common schools?

Our representative in Congress from the First District of Michigan, is reported to have said in connection with the Blair Educational Bill, that the entire proceeds of the land grants to the common schools in Michigan, would hardly suffice to operate these schools for a single year. He was right. The latest published report of the Superintendent of Public Instruction, is for the year 1885.

On September 30 of that year, the total amount of Common School funds yet realized from the land grants and upon which the State pays interest, was \$3,838,728.27; and the expenditures for the year, exclusive of library moneys, amounted to \$4,692,765.38. To this sum add, say, 5 per cent. as interest on the \$11,267,056.00 worth of school property, in buildings, sites, apparatus, etc., and you have a balance of expenditure in one year over the accumulated principal of the land grant funds of \$1,417,399.

Taking out of the account the sum named as interest on the investment, and it will be found that in the year 1884, the whole accumulations of the land grant funds would have met but little more than three-fourths of the expenditure made in behalf of common schools, for the twelve months named.

We hear so much concerning the magnificent fund which supports the common schools of Michigan, and so little of the endeavor and self-sacrifice of the people in sustaining them, that it has seemed well to set the facts forth plainly.

The fund is a magnificent one, and its value to the cause of free education can hardly be overestimated; but the fact remains that thus far the common schools of Michigan have depended mainly on moneys contributed directly by the people themselves.

In the future the part that the income from land grants will play in the maintenance of the schools will grow more and more insignificant in comparison with other resources. The increase of these permanent funds will be slow and uncertain, and they must before long reach their maximum; but the population of the State must increase rapidly as the years roll on, and the amount distributed will grow less and less per capita; but if the schools are wisely administered and the confidence of the people in them maintained, their willingness to meet increasing demands will keep pace with the necessities of the case.

Allusion has already been made to the Ordinances of 1785 and 1787, the first of which dedicated to common schools one section in thirty-six of the public land; and the second clinched and fixed this dedication by the declaration that "schools and the means of education shall be forever encouraged." These ordinances were the forerunners of all common schools in the then northwest regions, and a pledge and promise of their establishment.

But common schools being the offspring of legislation, it can

hardly be said that they began existence in territorial Michigan until the year 1827, four years after the organization of the Legislative Council, when the first law to provide for them was enacted. Under this law, any township could determine by a two-third vote not to maintain township schools; but if the decision was favorable to the establishment of a school, a schoolmaster of good morals was to be employed. A township having fifty families was required to have a school for a time equal to six months in the year; one having one hundred families, for a longer time. Townships of one hundred and fifty families were to have two teachers, and those of two hundred families were to have teachers well instructed in the Latin, French and English languages. A penalty consisting of a fine for the benefit of townships complying with the law was prescribed for townships which should fail or neglect to establish schools as directed. The schools so established were to be under the charge of five commissioners in each township. This law is worthy of notice here, because from its enactment the history of common schools in Michigan takes its earliest date. It is known that some townships complied with the law, and that schools were opened and maintained under it, but it is difficult, if not impossible, to ascertain much concerning the common schools of this period. This law also seemed to indicate broader views on the matter of free education than some of its successors; for the schoolmaster was to be supported by moneys assessed upon the polls and ratable estates in the township, and not by the hardships of a rate-bill.

In 1829 the law of 1827 was repealed, and another substituted for it. The law doubled the number of township school commissioners and authorized the Governors to appoint a Superintendent of Public Instruction, who should take charge of the school lands and make an annual report of their condition.

There is nothing to show that the increase in the number of commissioners operated to improve the schools; and no record of the appointment of a superintendent under the law. That the law was unsatisfactory is shown by the fact that four years later it was repealed, and a new one, differing, however, but slightly, enacted in its place. The number of commissioners was reduced. The townships were to be divided into districts, the districts each electing three directors to look after the buildings, and five directors to care for the schools and the teachers.

The accessible history of common schools from 1827 until the organization of the State and the adoption of a Constitution is mainly a history of legislation; but few facts as to the schools themselves are recorded. It is possible that there was little to record. Concerning this period I can hardly do better than to quote the words of Miss Lucy M. Salmon, in her admirable and exhaustive paper on Education During the Territorial Period, prepared as a thesis when she was a candidate for the degree of Master of Arts at the University of Michigan.

“As the population gradually extended beyond Detroit, schools were started; but of their primitive character at this, as well as a much later period, we have abundant evidence in the reminiscences given us by the pioneers of the State. The school-house was of logs, and there were no complaints of lack of ventilation. Oiled paper generally answered the purpose of window-glass. The doors were hung on wooden hinges, while one side of the room was given up to the fire-place. Slabs furnished with legs were in general use, answering the double purpose of seats in-doors, and of sleds out-of-doors; while desks were formed by placing planks upon pins driven into the sides of the room. The modern appliances for teaching were unknown. Even in the aristocratic center of Detroit, John Monteith used for his blackboard a shallow box of dampened sand. The branches taught were reading, writing, spelling, and arithmetic, and sometimes, but not often, geography and grammar. Reading and spelling were made specialties, and the average pupil graduated from arithmetic as soon as he reached vulgar fractions. Each child provided whatever text-book was convenient, and even in Detroit it was not unusual to find in the same class half a dozen different readers and as many arithmetics. The inducements held out to enter the profession (of teaching) were the privilege of boarding around, and four or five dollars per month; though in some districts the extravagant price of fourteen dollars per month was sometimes paid during the winter term. Occasionally pay was taken in farm produce or in labor, nearly all the schools being supported by voluntary contributions. The teacher, on his part, was to ‘keep the school’ six days in the week from six to eight hours per day.”

My own recollections of the rural schools go back to 1838, when Michigan was already a State in the Union; and I can testify that Miss Salmon's account of their general characteristics is not at all over-drawn. Indeed, it is possible to make some additions to the picture which she has so vividly painted. The teacher was expected to take care of the school-house as well as to instruct and manage the school. It was the duty of the patrons of the

school to furnish each, his quota of wood, for the fire-place or stove. This was usually delivered in sled lengths, and was not unfrequently of a quality to condemn it for home use. It was the duty of the one who brought it to see that it was cut up into suitable pieces for fire. This duty was commonly met so far as he was concerned, by ordering his boys at school to do the chopping at recess and noon-time. This will undoubtedly seem an admirable and altogether sufficient provision by all who know the fondness of the average boy for this kind of recreation, but it pains me to say that it occasionally failed. Then some pupil was sent to the nearest house to borrow an ax, and the master, after an oration to the scholars on the pleasures and benefits of manual exercise in general, and wood-chopping in particular, which, so far as my memory serves me, was sadly insufficient in bringing out volunteers among the bigger boys, with a sad heart and a far-away look in his eye, repaired to the wood-pile and made provision for his own and our immediate temporal comfort. Do not believe that our lack of readiness to volunteer as wood-choppers arose altogether from laziness or from disinclination to do the master a kind act. We had a higher and nobler motive in the prospect of so edifying a sight as that of the teacher exploring the snow-drifts for the logs, and then for the moment abdicating his unapproachable greatness and actually chopping; and when we tired of this, the wild delights of letting pandemonium loose in a school-house all unchecked by the eye and the rod of the master, was something to remember and to rejoice in.

My prescribed limits will not allow further detail as to the common schools of the period between 1827, the date of the first legislative notice of common schools and the admission of Michigan as a State into the Union. Miss Salmon, in her paper heretofore referred to and quoted from, says of the years thus included: "The work actually done during this period had apparently so little connection with all these (legislative) measures that it is necessary to consider it by itself. As the plans proposed seem to have been made with reference to the formation of an ideal system of education, and not to the practical needs of the Territory, so, on the other hand, the schools, as they actually existed, were in general carried on with little reference to any legislative theory or any uniform plan." No doubt this statement is in all respects true, and presents to our minds the strange spectacle of the

authorities putting upon paper, wild and visionary schemes having no real relation to the existing state of affairs, while the people who knew little and cared less concerning their educational air-castles, were slowly and painfully working their way by other and very divergent paths to something like a reasonable solution of the great problem before them. Though the history of the true common schools begins so late as 1827, it is perhaps well to stop for a moment to recall certain events having relation to the common schools, which had taken place previous to this initial date. Prominent among them is the famous legislation which was enacted and promulgated by the Governor and Judges of the Territory of Michigan in the year 1817, establishing—on paper only—the “Catholepistemiad of Michigania” with its thirteen “didaxiim,” or professorships, including, among others, “a didaxia or professorship of Catholepistemia or universal science,” a didaxia or professorship of anthropolossica or literature embracing all the epistemum of sciences relative to language, “and a didaxia or professorship of physiognostica or natural history.” The particular sciences included and comprehended in the thirteen didaxiim numbered sixty-three. There were to be thirteen didactors or professors in charge of the thirteen didaxiim, and the “Didactor of Catholepistemia” was to be obeyed and respected as president of the Catholepistemiad of Michigania. This tremendous and almost unspeakable institution was to be supported by an addition of fifteen per cent. to existing public taxes and a like per cent. of the proceeds of four successive lotteries to be arranged for and drawn by the aforesaid Catholepistemiad or University.

At the bottom of all this amazing effort of pedantry, promulgated when the population of the entire Territory was less than seven thousand, and uttered in a language which according to excellent authority is neither Greek, Latin, nor English, may be found certain grains of common sense, and many of the principles upon which the educational system of the State was afterwards founded. It recognizes the principle that chronologically, higher institutions of learning must antedate or at least be contemporaneous with schools for the culture of the masses. It concedes the truth of the doctrine that education of the people ought to be carried on at public cost, and places the University where it belongs, viz.: at the head of the school system. One of the earliest

enactments of its founders was certain additional legislation, which, after adopting an appropriate flamboyant seal for the Catholepistemiad proceeded to provide a course of study in reading, writing, and arithmetic in the primary schools to be connected in some manner as yet unprovided for with the unborn University. The tangible outcome of this marvelous piece of legislation was the erection, after some delays, of a building twenty-four by fifty feet in dimensions and two stories in height in the city of Detroit on the west side of Bates near Congress street, which was occupied mainly as a primary school supported chiefly by tuition charged to the parents of attending children, until June, 1838, when a branch of the University was opened within its walls. With the primary schools conducted in this building and under at least nominal control of the University trustees, several well known names are associated, notably that of Lemuel Shattuck, of Concord, Mass., who was from August 10, 1818, until October 8, 1821, the teacher of an elementary school managed on Lancasterian principles. This is a matter of interest mainly because it was, so far as I know, the only experiment on any considerable scale with this kind of schools made in Michigan. This system of instruction was introduced at Madras by Dr. Andrew Bell, an English clergyman, about the year 1790. He was chaplain of the English garrison stationed at Madras, and had, also, the supervision of a school for the education of orphan children of that city. He found it difficult to obtain assistants in this work, and resorted to the expedient of conducting the schools by means of the help of the pupils themselves. On his return to England a few years later, he published a pamphlet explanatory of his scheme. His work, however, attracted little or no attention at first, until Joseph Lancaster introduced the method into the schools of the dissenters early in the nineteenth century. The temporary success of Lancaster's efforts put England into a notable excitement. The church, alarmed at the success of Lancaster's schools for the dissenting poor, established similar schools under Dr. Bell, whose merits as the first modern promoter of the monitorial system, began to be remembered and extolled. Under Lancaster's vigorous propaganda schools sprang up everywhere, and for a time a new one is said to have been organized every week. The system was the educational sensation of the time. Everything was claimed for it. Dr. Bell said: "The system has no parallel in

scholastic history. In a school, it gives to the master the hundred eyes of Argus, the hundred hands of Briareus, and the wings of Mercury. By multiplying his ministers at pleasure, it gives him indefinite powers; in other words, it enables him to instruct as many pupils as his room will contain."

Lancaster's school was sometimes attended by a thousand pupils. It seems sufficiently absurd now in the light of a better experience, that so much was expected from a system that contemplated nothing better in the way of instruction than the repetition by monitor pupils to their mates, of what they themselves were taught but yesterday; that ignored the fact that teaching is the evolution of the powers of the pupil's mind, and that wisdom and cultivation on the part of the teacher are necessary elements in this process; but it took England by storm, took root in New York, where it held its own for many years, and was tried in many of the large American cities. Lancasterian schools were established in many States of Continental Europe. In England the general effect was to awaken a new and fervid interest in education, and thus the results were, on the whole, beneficial.

Great claims were made for the efficiency and economy of the plan, which was to have one master supervising the training of an indefinite number of children. The older and brighter pupils were trained and taught directly by the master, and they in turn communicated this newly acquired knowledge to the mass of pupils. As might be expected, there was little success in the way of maintenance of order and quiet. Some of the promoters of the system insisted that the noise and the confusion were an especial advantage, because pupils trained to attend to their studies in a great room where dozens of monitors were instructing hundreds of children and making themselves heard by sheer lung force, were getting a most useful preparation for the turmoil of actual life.

In the city of Detroit there was at first unbounded enthusiasm in behalf of Mr. Shattuck's Lancasterian enterprise; but after a time doubts sprang up as to its value, and the discussion of the subject became hot and general. Miss Salmon says that at last argument became of little weight, "when brought home to Detroit where no fine-spun theory was needed to show that the children of the school were noisy, impertinent and undisciplined, while the instruction was, of necessity, crude and imperfect. In addition to actual results, it was soon seen that the system was in itself radi-

cally defective. The school was kept up by Mr. Shattuck for four years, and by his successor about two years, but the method was soon abandoned."

The first Constitution, adopted in 1835, provided for a Superintendent of Public Instruction to be nominated by the Governor and confirmed by the Legislature. His term of office was to be two years. It required the Legislature to provide for a system of common schools to be maintained at least three months in every year in each school district. It made no requirement that the schools should be free, thus taking a step backward from the position taken by the Legislature in 1827. Hon. Isaac E. Crary of Calhoun county, was chairman of the committee which reported the article concerning education.

On July 26, 1836, an act containing the first legislation looking to the carrying out of the constitutional provisions concerning education became a law; and on the same day Rev. John D. Pierce was nominated and confirmed as first Superintendent of Public Instruction in the new State; and to him was intrusted, by the terms of the act mentioned above, the duty of preparing a system for the common schools, and a plan for the University.

Never was a duty more faithfully and conscientiously performed. His first report shows that his comprehensive mind had fully grasped the difficulties of the situation and the magnitude of the problem to be solved. He saw, that under the provisions of the Constitution there was room for noble and beneficent work, and he wisely planned for its beginning and its triumphant progress; but also he saw beyond constitutional provisions and limits, and from first to last in his long and useful career, he never failed to urge upon the people that the schools must be free in order to accomplish their highest and best work. In this connection I cannot do better than to quote a few of his own words from the document just mentioned:

"It has been rightly said, too, that common schools are truly republican. The great object is to furnish good instruction in all the elementary and common branches of knowledge for all classes of community, as good for the poorest boy of the State, as the rich man can furnish for his children, with all his wealth. The object is universal education, the education of every individual of all classes. * * * * It is this feature of free schools which has nurtured and preserved pure republicanism in our own land.

In the public schools all classes are blended together ; the rich mingle with the poor, and are educated in company. In their sportive gambols a common sympathy is awakened ; all kindly sensibilities of the heart are excited, and mutual attachments are formed which cannot fail to exert a soothing and happy influence through life. * * * * Nothing can be imagined more admirably adapted in all its bearings, to prostrate all distinctions arising from mere circumstances of birth and fortune. * * *

“ Let free schools be established and maintained in perpetuity, and there can be no such thing as a permanent aristocracy in our land ; for the monopoly of wealth is powerless where mind is allowed freely to come in contact with mind. It is by erecting a barrier between the rich and the poor, which can be done only by allowing a monopoly to the rich—a monopoly of learning as well as of wealth—that such an aristocracy can be established. But the operation of the free school system has a powerful tendency to prevent the erection of the barrier.”

In the mind of this far-seeing educator, and I may truly say statesman, universal education ought to be the objective point of all educational endeavor. To him universities had their justification not only in their direct and immediate advantages, but, also, and more emphatically, because elementary education must wither and finally perish without them. He foresaw the need of a normal school and foreshadowed it in his appeal for prospective provision that every teacher of the public schools shall have been through a regular course of professional training.

He emphasized the doctrine, that not only has every individual a natural right to at least an elementary education, but that where there is on the part of the State a binding obligation to suffer none to grow up in ignorance, and to this end he suggests compulsory education and the requirement upon all who have the charge of children to send them to school at least for a time equal to the annual three months named in the Constitution, and he puts this suggestion upon the high ground of the welfare of the individual and the security of the State.

In the same report he urges the immediate establishment of district libraries, and suggests means for their support. He prepared a schedule of school officers, consisting of township inspectors, the Township Clerk being *ex-officio* clerk of the township board, and a moderator, director and assessor in each district.

This plan of organization has persisted in its main features until the present time, and is in force to-day.

At this early date it could hardly be expected that any one would foresee the ultimate expansion of the common schools into institutions preparing students for the University; and so Superintendent Pierce made great efforts for the establishing of branches of the University in order that the way might be open for all to advance from the common schools to the doors of the system's crowning institution. This provision for preparatory instruction did not meet the expectations of its friends; and at an early date the branches yielded their place to the Union and graded schools; but, true to his instincts in favor of primary schools and loyal always to general education, Mr. Pierce's plan provided for the training of common school teachers in each of the branches to be established. Mr. Pierce's term of service as Superintendent of Public Instruction covered a period of five years, until April, 1841. He was the true pioneer in Michigan's educational field. When he was called to the great work of organizing a school system for the State, there were few precedents for his guidance. New problems were to be solved, and great questions before unasked and unanswered were to be dealt with.

Deeply impressed with the responsibility of the position assigned to him, he laid hold of the work vigorously and courageously, and brought to its accomplishment all the force of his far-seeing wisdom and indomitable industry, and all the energy of enthusiasm born of his love for his fellow-men and his confidence in the value of universal education.

The Legislature placed on his ample and sufficient shoulders the greatest burden of the hour, and confident in his wisdom and integrity followed, almost without deviation, the plan which he marked out.

His public services in behalf of the schools were by no means confined to the period during which he held the office of Superintendent.

Fortunately for the cause of education in Michigan, he was elected to the State Legislature in 1847, where confidence in his knowledge and good judgment made him a power in all matters pertaining to the schools, and enabled him to secure the passage of several measures of importance in their administration. Again and still more fortunately, he was called to take a conspicuous part

in the deliberations of the convention which framed the Constitution of 1850. His handiwork is to be seen in many of the provisions relating to the education of the people by means of the common schools, the university and the libraries.

He died in April, 1882, at the advanced age of 85 years. He was active in all good works to the last of his life, and his profound and intelligent interest in behalf of public education never faltered nor grew faint. Many of us here present knew him and honored him. We recall, at this moment, his massive, sharply-chiseled face, his kindly eye, his white locks, his towering form and his venerable presence. He stands among Michigan's noblest benefactors. Ought not our children and our children's children to know him, and remember him? Has this Commonwealth yet produced a man whose portrait would more worthily grace the halls of this Capitol than his?

At the close of Mr. Pierce's term of office, the organization of the schools had progressed as follows: From fifty-five districts in 1836, to 2,215 in 1841, and the number of children attending the schools from 2,377 in 1836, to 51,254 in 1841. In his last report he again gives emphatic expression to a doctrine which had been, throughout his career, the chief guide of his action: "The property of a State ought to be held liable for the education of all within its borders, and on this principle every school system should be based."

Mr. Pierce's successor, Franklin Sawyer, Jr., was appointed on the 8th day of April, 1841, and the term of his service ended in May, 1843. He was a graduate of Harvard University, and came to Detroit about the year 1830, where he studied law and was admitted to the bar. After a few years of practice at the bar, during which he was, for a time, a partner of Jacob M. Howard, he turned his attention to journalism, in which he made a reputation as a brilliant and forcible writer. He brought to the work of superintendence of the schools, excellent scholarship, great industry and earnestness, and habits of systematic work. He made a careful and laborious inquiry into the working of the school system, and found it excellent in its main features, but discovered to the Legislature and the people great imperfections in its details, especially in the working of the amendments made to the law of 1840. He found the most striking defect in the inadequate provision made by means of the township taxes for the sup-

port of schools. During his administration an attempt was made to remedy this serious defect ; but the new amendatory act was itself defective, providing only that the electors of any township be authorized to raise any sum of money for the support of schools, provided that such sum should not exceed one dollar for each person within the limits of the school age, in the township ; but making no adequate provision for securing such action by the electors ; and therefore the financial affairs of the schools were not at all improved by its enactment.

In his reports he was the steadfast and vigorous supporter of the free school doctrine so ably promulgated by his eminent predecessor. "He urged the supremacy of the common schools over all others, as upon them depend the very existence of higher seminaries of learning." He says, "Education is a common right, the exclusive property of no man, of no set of men."

In his first report to the Legislature he made a strong presentation of the absolute necessity of free education, based upon taxation of the property of the State. In the second year of Supt. Sawyer's incumbency, the State Land Office was established and the Superintendent of Public Instruction was relieved of the onerous duties pertaining to the custody and accounts of the school lands. This was a most desirable and salutary change, freeing the executive school officer from a burden which ought never to have been imposed upon him. During the same year, several important changes in the school laws were made. In accordance with a suggestion made in his second report, the new law provided for the raising of the township mill tax, for the support of schools in the various districts. This was the most important legislation, and it marks a conspicuous era in the school history of Michigan. The law did not provide for the immediate levying of the whole amount of one mill on the dollar, but it was enacted that the supervisor in each township should assess, for the support of schools, for the year 1843, twenty-five dollars ; for 1844 one-half mill on each dollar of the total valuation of the taxable property of the township ; for 1845 and thereafter, the whole amount of one mill on the dollar.

Mr. Sawyer's draft of the revision of the school laws provided that the schools should be supported by the income of the school fund, the mill tax, and such other sum as should be voted in the district meetings. In other words, that the schools should be free

to all comers. The Legislature, however, did not agree to this view; and attempted to remedy the difficulty in raising money for the payment of teachers by means of a rate-bill. The disastrous effects of this policy have been alluded to heretofore in this paper; but with all its disadvantages and attendant discouragements, it held its paralyzing sway in the schools for more than a quarter of a century, and not until the year 1869 were they relieved of this wearying burden.

Dr. Oliver C. Comstock succeeded Mr. Sawyer as Superintendent of Public Instruction on May 8, 1844. The school laws had been recently revised and amended, and while much that was unsatisfactory remained in them, the Legislature, fearful of the danger of changes too frequent and too radical, prepared "to submit to temporary difficulties rather than to legislate anew upon a subject in which a permanent and settled policy is as much to be consulted as correctness of principle and propriety of detail." It therefore happened that the administration of Dr. Comstock was an uneventful one, no extensive or radical changes being made during its existence. A biographical sketch given in the report of the Superintendent in the year 1880, accords to him large abilities and faithful and efficient service.

Certainly his reports bear the impress of careful and correct thought and diligent labor, and are filled with practical, wise, and faithful suggestions.

In April, 1845, Ira Mayhew, of Monroe, was appointed by the Governor and confirmed by the Legislature to succeed Mr. Sawyer in the superintendency. He served two constitutional terms, retiring from the office in 1849, and afterwards recalled to it by election at the hands of the people, under the Constitution of 1850, for another period of two terms.

The period of Mr. Mayhew's first superintendency was one of unprecedented activity in educational affairs. He early succeeded in correcting, at least to a considerable degree, the misdirection of moneys arising from fines, penalties and forfeitures, and in applying them to the purposes to which constitutional provision and legislative enactment had dedicated them.

He reinforced Superintendent Sawyer's urgent appeal for a better and more efficient supervision of the schools, which was voiced and repeated by his successors until it was met, in 1867, by the passage of a law establishing county superintendence.

He was the first to engage actively in the formation of teachers' associations, founding the first one in Lenawee county; and by persistent endeavor he succeeded in establishing teachers' institutes, and labored untiringly in their behalf, not only in securing for them a permanent place in the educational system of the State, but also in the actual work of conducting instruction in them.

They came into favor at once, and from that day to this, they have been acknowledged as one of the foremost agencies in arousing among teachers a genuine professional spirit, and in giving them the means of a better preparation for their work. He made strong efforts in behalf of the circulation of educational journals, and induced great numbers of the teachers to subscribe for them. Under his administration, and by his advice and encouragement, the Union Schools, the precursors of the present High Schools, took their rise. He was quick to see in them the more useful and valuable successors to branches of the University—which were moribund in 1848, and practically dead before the expiration of Mr. Mayhew's second term. He saw in them the true and enduring link between the primary schools and the University.

He began the agitation for a Normal School and continued it with such vigor that the year 1849 brought the fruition of his hopes and the result of his labors in legislation providing for the establishment of a State Institution for the training and instruction of teachers.

He was a zealous educational missionary in a new and needy field. He visited the remotest parts of the State, lecturing, encouraging and helping.

The Legislature requested him to prepare and publish a volume containing the views set forth in his course of lectures. In answer to this request he published a volume called "Means and Ends of Universal Education," which did excellent service in informing the people and arousing their interest in the matter of which it treated.

During Mr. Mayhew's administration previous to the adoption of the new Constitution in 1850, the number of organized districts increased to 3,075 and the number of children attending the public schools to 102,871. The corresponding figures for 1845, when he began his work, were 2,683 and 75,770. On March 25, 1849, he was succeeded in the superintendency by Francis W.

Shearman, of Marshall, thus closing the first period of his official career with credit to the State, honor to himself and lasting advantage to education in Michigan.

Mr. Shearman, appointed at the date mentioned above, was elected under the new Constitution in 1850, and re-elected in 1852, served the State as Superintendent of Public Instruction for nearly six years, until January 1, 1855.

In 1850 the revised Constitution was adopted and went into effect. A comparison of this instrument with the Constitution of 1835, shows several important changes affecting the common schools. Among these the following are prominent:

The Superintendent of Public Instruction was to be elected biennially by the people.

The first Constitution required the Legislature to provide for a system of common schools, but did not require the maintenance of free common schools. The revised instrument made it obligatory upon the Legislature to provide for and establish, within five years, a system of primary schools to be open, in every school district, at least three months in each year, without charge for tuition. In other words, it required the Legislature, within the time named, to establish a system of *free* common schools.

It also provides that all specific taxes with certain exceptions, after extinction of the public debt, other than the amount due to the educational funds to be added to and become a part of the Primary School Interest fund.

During Mr. Shearman's first elective term, in 1851, there was legislation that seemed, at the time, to be of great prospective importance. The mill tax was changed to a tax of two mills on the dollar, thus doubling one of the chief sources of revenue to the schools; but two years later this tax was changed back again to the original amount, as fixed for the year 1845. In October, 1852, during Mr. Shearman's superintendency, the Normal school was dedicated by appropriate ceremonies, and in the following spring it was opened for the reception of students and began regular work. In the same year, 1852, the State Teachers' Association was organized at the Normal School; A. T. Welch, principal of that institution being its first president. Mr. Shearman was graduated from Hamilton college in the nineteenth year of his age. He was an elegant and accomplished scholar; a most amiable and agreeable gentleman, and a writer of great force and abil-

ity. His annual report for 1852, included a full, historical account of education in Michigan, from the earliest territorial times to the date at which it was written. It is a comprehensive and valuable work which must still be consulted by every one who makes any serious inquiry into the educational history of Michigan.

Mr. Shearman's successor was Ira Mayhew, of whom mention has already been made in this paper. Called thus to service a second time, he entered upon his work with the industry and steady vigor that characterized his previous administration. He was re-elected in 1857, and continued in the service of the State until the end of the official term, January 1, 1859.

In his report for the year 1855, he urged the compliance of the Legislature with the requirements of the Constitution concerning free schools. The time set for their establishment was already past, and as yet nothing effective had been done towards meeting those requirements. If he had foreseen that nearly a decade and a half were yet to elapse before the Legislature would yield full obedience to the Constitutional mandate, he would have been discouraged indeed. He renewed his appeal of ten years before for a better and more efficient system of supervision, but in this also he was many years in advance of the views of the law-makers. Having thus made brief mention of the leading events in the earlier history of our common schools, and of some of the more noteworthy pioneers in Michigan's educational field, I must hasten to close this sketch.

Next in order comes the superintendency of Dr. John M. Gregory. As he stands on the dividing line between the pioneers and their worthy successors, perhaps it may not be thought invidious if the historian pauses to give a brief expression to the general feeling of kind regard and high respect which the people of this State entertain for him. He was a man who gave to his work in the schools all the resources of a large and sympathetic heart, and all the power of a strong, keen and magnificently disciplined mind. He was an indomitable and untiring worker, and while he made no startling innovations, he stood upon the strong foundations laid by his predecessors, and built with the skill of a master artificer.

His enthusiasm and devotion were contagious and inspiring, and his four years of service, ending January 1, 1865, were full of

profit to the State. Following Mr. Gregory comes Oramel Hosford, of Olivet, to whom the people gave the extraordinary and well-deserved compliment of three consecutive re-elections, and a continuous term of eight years. During his incumbency the Legislature at last listened to the many times repeated advice of a long line of Superintendents, and enacted a law providing for a system of county supervision.

For eight years this system was maintained. It is the testimony of those who should know best, that this plan was in all respects a decided improvement over the absence of supervision which had previously been the policy of the State.

Of its downfall in 1875, the historical sketch in the report of the Superintendent of Schools, for 1880, says: "Although the scheme was in many respects faulty, yet the efforts and influence of the superintendents were conducive to much good, and a wide contrast was soon manifest between the schools taught under its operations and those of former years, but its defects were seized upon by those who had, from the beginning, opposed it, and every opportunity was taken to belittle and cripple it. As a consequence, a weight of popular opposition was brought against it, to which the Legislature, without any attempt to modify its defects, yielded, and in 1875 repealed all its provisions and inaugurated in its stead a system of township superintendency of schools." Six years sufficed to show the unwisdom of the change mentioned above. The system of township supervision was found to be, if possible, less valuable than the absence of all supervision which prevailed before the advent of county superintendents. In 1881 the Legislature returned to a somewhat modified county system which promises good results. Three county examiners have in charge the whole matter of the examination of teachers, while the chairmen of the township boards are charged with the duty of the immediate supervision of the schools, each in his own township.

Next in order after Mr. Hosford came Daniel B. Briggs, who served four years, his second term ending January 1, 1877. Mr. Briggs is the last Superintendent who has fully filled out the term for which he was elected; his successors, Messrs. Horace S. Tarbell, Cornelius A. Gower and Herschel R. Gass, all having resigned the office before the expiration of their several terms; and the present Superintendent, Theodore Nelson, of St. Louis, Michigan, having not yet completed the term for which he was elected.

It remains to give a brief synopsis of the present condition of the common schools, as compared with their status fifty years ago. The fact is that the records of the schools in the first years of Michigan's existence as a State make it impossible to obtain the data for such comparison as to many interesting facts. One is, therefore, obliged in many instances to make the comparison between the present time and a date more recent than 1836.

The latest published report of the department of instruction brings the Educational Statistics down to September, 1885. The exact progress which the schools have made real in excellence, is, of course, difficult of measurement. We cannot lay the measuring line to the products of education as we can to the output of a mine, or to the results of half a century of manufacture. To one who has seen them in the early times and who knows them now, their progress in all that makes schools worth having, and secures for them the respect and confidence of communities, is pronounced and unmistakable.

But their material progress is more easily measured and exhibited. The last half century has seen the attendance upon them increase from two or three thousand, as reported, to more than 400,000; the annual resources from \$23,171 to \$5,703,412; the number of organized districts from 55 to 6,932; and since 1845 the number of teachers employed has increased from 3,053 to 15,358.

It must be admitted, however, that these figures cannot, and do not, have any very exact value in measuring real progress; but they do show, that in spite of all complaints and criticisms, the people care for their common schools; and that they are to-day, after an experience of fifty years, more ready than ever before to give them abundantly whatever their needs require.

THE STATE NORMAL SCHOOL.

Having already nearly exhausted the space allotted to me for these sketches I shall limit myself to a brief statement of the conspicuous points in the history of this institution. The preceding sketch has already called attention to the urgency with which the early Superintendents of Public Instruction had pressed upon the attention of the Legislature the imperative need of suitable means for preparing teachers for their work.

As early as 1836, Superintendent Pierce made an able presentation of the subject. In his first report he gave a review of the Prussian system of Normal Schools, and strongly recommended the adoption of a similar plan for the benefit of education in Michigan; and in his subsequent reports he kept this matter, which he deemed of prime importance, before the people of the State. He was careful to provide for the beginnings of normal instruction in the plan for the organization of branches of the University, which he submitted to the Legislature. His successor, Superintendent Sawyer, was mindful of the same pressing need, and called the attention of the Legislature to the importance of establishing a Normal school.

In 1843, Superintendent Comstock again urged the necessity for such a step, and dwelt upon the benefits and advantages that it would secure to the Schools.

Superintendent Mayhew took the subject in hand with characteristic persistence and earnestness, and at last succeeded in securing a favorable hearing by the Legislature. In the year 1849, an act was passed providing for carrying out the plan which Mr. Mayhew and his predecessors had so perseveringly advocated. The law establishing the State Normal School was enacted and approved in March of that year. This new educational enterprise was placed in charge of a State Board of Education, consisting of three persons appointed by the Governor, the Lieutenant-Governor, and the Superintendent of Public Instruction, the last being secretary of said Board. The Legislature of 1850 added the State Treasurer, who was to be the treasurer of the Board.

During the same year, the new Constitution was adopted. This provided for a Board of four persons, three of whom are elected by the people and hold office for six years, one being chosen at each biennial election. The fourth is the Superintendent of Public Instruction, who is *ex-officio* a member and the Secretary of the Board. The first election under this provision of the Constitution was held in the fall of 1852; and the State Board of Education thus constituted began their term of office in January, 1853.

Under the law of 1849, ten sections of Salt Spring lands were appropriated for the purpose of defraying the expenses of erecting a building and for the purchase of necessary apparatus, books, etc. Another fund, called the Normal School Endowment fund,

was also established by a grant of fifteen sections of Salt Spring lands; and the Board of Education was directed to locate the lands comprising both grants.

In 1850 the two grants were consolidated into one, constituting a Normal School Endowment fund; and from this endowment fund a sum not exceeding \$10,000 was reserved for the erection of buildings; about \$8,000 of this fund was actually used for this purpose. The remainder of the proceeds of the sale of the lands granted for normal school purposes is now held by the State, and the interest at six per cent. goes annually to the maintenance of the Normal School.

The present condition of this fund is as follows:

In the hands of the State.....	\$61,784.81
Due from purchasers of lands.....	7,341.23
	<hr/>
	\$69,126.04

The fund has attained its maximum. The last of the Normal School lands were sold in 1868, and since that time sales have been made only of lands forfeited for the non-payment of interest. Originally the lands comprised 16,000 acres; and the amount realized is an average of about \$4.80 per acre.

The members of the first Board of Education were Samuel Barstow, Randolph Manning and the Rev. Samuel Newberry, with the Superintendent of Public Instruction and the Lieutenant Governor. This Board proceeded promptly to locate the Endowment Fund lands and select a place for the Normal School.

Proposals were received from Jackson, Niles, Gull Prairie, Marshall, and Ypsilanti, each offering to donate lands and sums of money to secure the location of the school. The most favorable proposition came from Ypsilanti. The offer included the following items: An eligible lot for the proposed site, a subscription of \$13,500, the use of temporary buildings, and the payment of the salary of the teachers of the model school for five years. Accepting this offer, the board proceeded at once to enlarge the grounds by the purchase of an additional tract of four acres, and to erect a brick building fifty-five by one hundred feet in dimensions, and three stories in height, at a cost of \$15,200. This was finished and ready for use in the autumn of 1852.

The remaining history of the buildings may properly be given at this point. In October, 1859, the original building was partly

destroyed by fire, but was rebuilt with \$8,000 realized from insurance, and was again in readiness for the reception of students in September, 1860. Though the loss of the building was thus made good, the school suffered from the destruction of its library, furniture and apparatus to the extent of nearly \$6,000.

An additional building was finished in 1869. An interesting account of its erection is given in the Historical Sketches published in connection with the report of the Superintendent of Public Instruction for 1880, as follows:

"In 1864, the Board of Education made an arrangement with the executive committee of the State Agricultural Society to erect a building seventy by forty feet, and two stories above the basement, to be used by the school and to contain the Museum of the Agricultural Society. The terms were that the society should contribute two thousand dollars, the citizens of Ypsilanti fifteen hundred dollars, and the Board of Education the balance, for the erection of the building. During the year 1865 the building was inclosed, the work having been greatly retarded by the high price of materials and labor; and in September, 1868, the most that could be said was, 'it has been inclosed, and rooms finished in the basement for the janitor.' In the meantime the committee of the Agricultural Society had become discouraged, and in 1868, after an expenditure of three thousand two hundred and fifty dollars, assigned their interest in the property to the Board of Education. The Legislature in 1869 appropriated \$7,500 for the completion of the building, which was effected the same year. In 1871, the Legislature very justly voted an additional appropriation of \$3,250 to reimburse the Agricultural Society for the money it had expended. This building is now mainly occupied by the Conservatory of Music connected with the Normal School."

In 1878 greatly needed additions were made to the main building. A new front eighty-five by eighty-six feet, three stories high above the basement, was erected, the cost being about \$43,350, of which the citizens of Ypsilanti contributed \$2,300.

The growth of the school making still more room necessary to its suitable accommodation, a wing, by one hundred feet and two stories in height, was added to the west side of the original building in 1882. The entire cost to the State, of the buildings, furniture, fixtures and repairs from the date of the establishment of the school, thirty-three years, has been less than \$84,000.

The recent extraordinary increase in the number of pupils in attendance makes necessary still further additions to the school

buildings, and the Board of Education, at the last session of the Legislature, made an earnest but ineffectual appeal for an appropriation for this purpose.

There is time for only the briefest possible outline of the annals of the Normal School, the succession of its administrations, etc.

The building was dedicated with appropriate ceremonies on October 5th, 1852. Hon. John D. Pierce, the honored father of education in Michigan, who saw in the event the fruition of his most earnest efforts, delivered the main address of the occasion. D. Bethune Duffield, then, as now, the firm friend and energetic promoter of popular education, contributed a brief poem which is presented herewith:

“Hail, Spirit of immortal truth,
Bright emanation from on high,
Now o’er our Nation’s glowing youth
Extend thy wings of purity—
To thy great purpose now we raise
These noble walls, this song of praise.

Here we have built a holy shrine
Where thy true worshippers may kneel
And seek to know the art divine
Of teaching what thy laws reveal;
Pour then thy flood of golden light
And cheer the groping student’s sight.

May thy disciples hence depart
Well girded for the toilsome life
And ever as they faint at heart
Sustain them for the ceaseless strife;
Give them to feel that by thy power
Bright hopes oft deck the darkest hour.

Teach them our rising youth to lead
In wisdom’s ways, whose paths are peace;
And grant Thou as the years succeed,
Our numbers here may still increase;
Till from those heights bright streams shall flow
To cheer the drooping vales below.

Great God, preserve this sacred fane,
And let thy smile upon it rest,
For Art and Science build in vain,
Unless the work the Lord hath blessed.
Take it within thine own embrace,
And bless it to our land and race.”

Hon. Isaac E. Crary, of the Board of Education, in a few well chosen and eloquent words, dedicated the school to its high purposes. Hon. Chauncy Joslin, in a brief but impressive address, installed Prof. A. S. Welch as the first principal of the school, and delivered to him the keys of the building, as a symbol of his office.

A State Teachers' Institute, under the direction of the principal of the school, was held during the four weeks next succeeding the dedication. During this Institute the Michigan State Teachers' Association, which has ever since been an educational power in the State, was organized, the new principal of the Normal School being its first president.

The first actual session of the Normal School was opened in March, 1853. The actual work of the school, therefore, covers a period of a little more than thirty-three years, one-third of a century. Its affairs have been administered by several principals, the order and length of whose service is shown in the following table:

Name of Principal.	Period Covered.	Years of Service.
A. S. Welch ..	1853-1865 ..	12 years.
D. P. Mayhew.....	1865-1870.....	5 "
C. Fitzroy Bellows.....	1871 ..	1 "
(Acting Principal.)		
Joseph Estabrook.....	1871-1880.....	9 "
Malcolm McVicar.....	1880 ..	1 "
D. Putnam.....	1881-1883.....	2 "
(Acting Principal.)		
Edwin Willits.....	1883-1885.....	2 "
D. Putnam.....	1885-1886.....	1 "
(Acting Principal.)		

The purpose of the Normal School was defined in the law establishing it, as follows: "Be it enacted by the Senate and House of Representatives of the State of Michigan, that a State Normal School be established, the exclusive purpose of which shall be the instruction of persons, both male and female, in the art of teaching, and in all the various branches that pertain to a good common school education; also to give instruction in the mechanic arts, and in the arts of husbandry and agricultural chemistry, in the fundamental laws of the United States, and in what regards the rights and duties of citizens."

To this day there has been, so far as the law is concerned, no change in the original purpose of the school, but the course of

events has tended to the narrowing of its original aims, to the one purpose of training teachers for their work in the schools of the State. For a time, during the earlier years of the institution, lectures upon agricultural chemistry and the arts of husbandry were regularly given; but the enactment in 1855 of a law directing the establishment of an Agricultural College, removed the necessity for further efforts in this direction. Indeed, from the first, it seems to have been generally understood that the real work of the Normal School was the training of teachers. Superintendent Gregory, in the report for 1859, speaks as follows: "The State Normal School was established by the Legislature in 1849; and its main design is to be a school for teachers, where they may receive instruction peculiarly adapted to their profession; though the law contains some rhetorical flourishes about giving instruction in the mechanic arts, and in the arts of husbandry, and agricultural chemistry, in the fundamental laws of the United States, and in what regards the rights and duties of citizens. The Normal School is to the primary schools what theological seminaries are to the churches. It is simply the teachers' college, and a school for professional training."

It will be seen by reference to the law quoted above, that it requires that instruction be given "in all the various branches of study that pertain to a good common school education." Of course this means academic instruction, and foreshadows the policy of the school to be to equip future teachers with a suitable knowledge of the branches to be taught by them, as well as to train them in the science and art of teaching. In other words, it was not designed to make the Normal School strictly and absolutely professional. A purely professional normal school would require of its pupils full knowledge, gained elsewhere, of all the subjects of instruction, and would undertake only to train them in the philosophy of education, school government, methods of instruction, etc. To such a school, graduates of colleges and others who had already acquired all needful knowledge in mathematics, science and literature, would come for training and instruction in the art of teaching.

In the work of giving instruction in the several branches of study, the Michigan Normal School occupies the educational field in common with other literary and scientific institutions. It is peculiar and professional only when it undertakes to train its pupils in the "Science and Art of Teaching."

About the year 1872, the question whether it was not time for the Normal School to abandon academic work and become a strictly professional institution, began to be agitated and warmly discussed. This discussion, carried on in the State Teachers' Association and elsewhere, reached its culminating point in the year 1878. It was argued with some warmth, that there was no longer any necessity that the school should engage its energies in the direction of academic instruction. It was said that the High School and Colleges were equipped for this work, and were willing and abundantly able to do it. It was thought that the time was ripe for a radical change which would free the Normal School corps from everything except the appropriate work of a typical professional school. It was also thought that Michigan ought, for her own sake, to make this advance, and that great credit would justly fall to her if she should take the lead in so important a matter, and be the first to maintain a true American Normal School devoted exclusively to professional effort.

In the spring of 1878, the faculty of the school, convinced of the value and feasibility of these suggestions, requested the Board of Education to prepare a course of study, in accordance with them.

The following quotation from the catalogue of 1877-8 gives a history of the adoption of the new plan of work.

"There is in process of erection at Ypsilanti, a new building for the State Normal School, which has grown to need more extended and fitting accommodations.

"It has been thought fit to signalize the occupancy of these new quarters in September next, by making such changes in the economy of the school and its scheme and methods of work as shall bring it fully up to the most progressive and well defined views now held of the true sphere of Normal Schools."

The faculty of the school requested the State Board of Education to prepare a course of study to be entered upon at the commencement of the new school year. Accordingly the State Board of Education, at its meeting on the 8th of March last, appointed as a committee for this work its president and secretary.

This committee entered upon its labors by requesting each member of the Normal faculty to prepare *in extenso*, in writing, for the use of the committee, his views on the proper work of the Normal School.

An extended correspondence was entered upon with the leading educators of this State and many in other States, and very elaborate and able reports were presented by several members of the Normal faculty, and the opinions of all secured.

At a meeting of the State Board of Education on the 12th of April the committee above mentioned presented the following report, which embodies the judgment of the committee, and is consonant with the views of a very large majority of those whose opinions were obtained :

“The committee appointed to examine and report upon communications from the faculty of the Normal School, in relation to a change in the course of study, would respectfully report that they have been exceedingly gratified by the full and able papers presented; and while there are differences in the details of the courses of study recommended, they find substantial unity of views in the general plan. It is agreed by all that the Normal School should, if possible, be brought more into sympathy with the superintendents and principals of the high schools of the State, and assume a more purely professional character. To accomplish these objects, two plans are suggested—one being to elevate the standard of academic attainment required for admission, and to remodel the course of study so as to combine academical and professional study during the entire course; the other to separate the academical entirely from the professional, all academic preparation to be made prior to admission to the Normal School.

The committee deem it wise to combine the two plans to a certain extent, and by so doing secure a substantial agreement between the members of the entire faculty.

They recommend :

1st. Enlarging the School of Observation and Practice, so as to constitute a graded school, representing all the departments of our best graded schools, and that students applying for admission to the Normal School, deficient in academic preparation, be allowed to make such preparation in the School of Observation and Practice.

2d. This School of Observation and Practice to be under the supervision of the principal of that school, with two skilled assistants, but the teaching to be done by Normal students, under the direction and inspection of the respective professors of the Normal.

3d. To establish in the Normal School proper three courses of study, of one year each,—the Common School, Higher English, and Language, fitting teachers respectively for the lower and higher grades in our common and graded schools.

4th. Aside from general reviews in connection with professional

instruction, the Normal School proper to be confined to professional instruction.

5th. The requirements for admission to the Normal School proper should be carefully and fully stated in the prescribed courses of study, and students admitted on certificates from our high schools should still be required to pass examination in the elementary branches.

6th. Your committee recommend that in the prescribed course of study, both for the School of Observation and Practice, and of the Normal School proper, more attention be given to Drawing and English History and Literature.

Your committee do not think there will be any difficulty in combining and modifying the several schemes, or courses of study, so as to remodel them on the plan proposed, prescribing just what should be pursued in the School of Observation and Practice, and what shall be pursued in the Normal School proper.

The School of Observation and Practice is an absolutely essential part of the Normal School, without which, and without full and careful teaching in which by the pupils of the Normal School, under their respective professors, we are satisfied the Normal School would fail to send out teachers fully fitted for the work of their profession.

Your committee would recommend the reference of the several schemes of study to a committee, to be modified and combined and perfected, so as to carry out the general purposes and views above set forth.

W. J. BAXTER,
H. S. TARBELL,
Committee."

The report of the committee was adopted without dissent, and the following committee appointed in accordance with the recommendation of the report.

Committee on Courses of Study for the Normal School—Superintendent J. M. B. Sill, of Detroit; Prof. Daniel Putnam, of Ypsilanti; Horace S. Tarbell, of Lansing.

This committee, after careful consideration, has prepared the following course of study and requirements for admission to the several departments of the Normal School:

COMMON SCHOOL COURSE OF PROFESSIONAL INSTRUCTION.

REQUIREMENTS FOR ADMISSION.

A thorough knowledge of Practical Arithmetic, English Grammar, Local Geography, Orthography, Reading, History of the United States, Elements of Physiology, of Vocal Music, and of Drawing, and Elementary Algebra.

COURSE OF INSTRUCTION.

1.	Elementary Principles of Education.....	20 weeks.
2.	School Organization, Government, School Laws, History of Education, Methods of Reading and Study, etc....	20 weeks.
3.	Practice Teaching.....	40 "
4.	Reading and Orthography.....	10 "
5.	Arithmetic.....	10 "
6.	English Grammar.....	10 "
7.	Geography.....	10 "
8.	History of the United States.....	5 "
9.	Vocal Music.....	10 "
10.	Drawing.....	10 "
11.	Penmanship.....	5 "
12.	Algebra.....	5 "
13.	Physiology.....	5 "
14.	Objective Teaching (Botany, Zoology, Physics).....	15 "

ADVANCED ENGLISH PROFESSIONAL COURSE.

REQUIREMENTS FOR ADMISSION.

In addition to the requirements for admission to the Common School Course, a good knowledge of the following branches of study (a course equal to that of our best high schools is understood): Higher Arithmetic, Algebra, Geometry, Bookkeeping, English Composition, Rhetoric, English Literature, General History, Mental Science, Botany, Zoology, Physical Geography, Natural Philosophy, Chemistry, Civil Government.

Equivalents for any of these branches, or of those required for admission to the course in languages, will be accepted, at the discretion of the faculty, and students will be required to pursue those studies only in the advanced professional courses, for which preparation was required for admission.

COURSE OF INSTRUCTION.

1.	Elementary Professional Work.....	5 weeks.
2.	Advanced Professional Work.....	35 "
3.	History of Education, School Government, Civil Govern- ment, etc.....	20 "
4.	Practice Teaching.....	40 "
5.	Arithmetic.....	5 "
6.	Algebra.....	5 "
7.	Geometry, Trigonometry, etc.....	10 "
8.	Geography.....	5 "
9.	Physiology and Zoology.....	5 "
10.	Botany.....	5 "

11. Astronomy.....	5 weeks.
12. Geology.....	5 "
13. Natural Philosophy and Laboratory Practice.....	5 "
14. Chemistry and Laboratory Practice.....	5 "
15. Rhetoric, Grammar and Composition.....	5 "
16. History and Literature.....	10 "
17. Reading, etc.....	5 "
18. Penmanship.....	5 "
19. Drawing.....	5 "
20. Vocal Music.....	5 "

PROFESSIONAL COURSE IN LANGUAGES.

REQUIREMENTS FOR ADMISSION.

In addition to the requirements for admission to the common school course a good knowledge of the following branches of study (a course equal to that of our best High Schools is understood :) Latin and Greek, or German and French, Algebra, Geometry, General History, Mental Science, Botany, Zoology, Physical Geography, Natural Philosophy, Chemistry, Civil Government.

COURSE OF INSTRUCTION.

1. Elementary Professional Work.....	5 weeks.
2. Advanced Professional Work..	35 "
3. History of Education, School Government, Civil Govern- ment, etc.....	20 "
4. Practice Teaching.....	40 "
5. Latin and Greek or German and French.....	30 "

And any ten of the subjects, numbered 5 to 20 inclusive, in the preceding course.

SPECIAL COURSES.

Students may take, with the approval of the faculty, special courses which shall require attendance at not less than seventeen lectures, recitations, and exercises per week.

Preparatory to these professional courses which were to engage the attention of students in the Normal School proper, and which graduates of high schools in good standing might enter and pursue, a full graded course including the subjects usually taught in primary, grammar and high schools, was prepared for the School of Observation and Practice. Students desiring to take either of the advanced professional courses, but not adequately equipped with academical knowledge, were to receive in the school the required amount of instruction. Thus the Normal School proper was to become a strictly professional institution, and all academic

instruction except certain reviews was to be furnished by the School of Observation and Practice. The report of the Committee of the Board of Education, quoted heretofore, exhibits the proposed administration of this school as to supervision and instruction.

This plan of work did not prove satisfactory, and it was as to most of its distinguishing points, abandoned after a trial of about two years. The advocates of this change, among whom was the writer of this paper, did not take into sufficient account the fact that an almost indispensable element in the training of a teacher lies in the lessons set before him in the model presented by his own instructors, and that normal instruction is most effectively given by example and precept when it progresses step by step with the acquirements of the necessary academic knowledge. This is especially true in the acquisition of skill, in the orderly presentation of the subjects of study and in methods of instruction generally. Nothing more powerfully influences teachers in dealings with their pupils than their recollections of what was done for them in the days of their pupilage; and one of the most efficient factors in normal training is the correct example of normal teachers. In unprofessional schools the effort of the instructor is to secure to his pupil a thorough knowledge of mental power and mental strength. The normal teacher adds to these a professional trend to all that is done and a professional color to all that is acquired.

The new plan as suggested and adopted lacked that element of success and efficiency. Students whose ideas of methods had already firmly crystallized under influences of all kinds, good, bad and indifferent, were expected in a single year, divided between reviews and practice in teaching, to become skilled instructors and efficient in management and discipline. This was too much to expect, and the experiment was unsatisfactory in its results. It is true, also, that notwithstanding the great advance which has been made in the opportunities for primary and secondary instruction, that there are still many regions in Michigan where it is either impossible or extremely difficult for young persons to obtain academic instruction suitable in kind and adequate in extent to serve as a basis for a purely professional normal course; and these are the localities where the need for trained teachers is most urgent.

Though this experiment was on the whole unsuccessful, it was by no means barren of valuable results. It was made under circumstances which were, so far as the school was concerned, as favorable as could be expected. The faculty united in a request for the new departure and were, no doubt, earnest in promoting its success. It seems, therefore, that its failure was due to the fact that it was made too early, before the general educational condition of the State would warrant a change so radical. It also seems evident that a considerable period of time must elapse before it will be worth while to make another similar trial.

Another very valuable result of the action above described, was the infusion into the school of greater earnestness in the direction of professional training. At the present time the Normal School is probably as thoroughly professional as the existing condition of general education will allow. While academic instruction, dominated and directed by earnest pedagogical spirit, receives its due and necessary share of attention, professional requirements are conspicuous and exacting in all the course of study. Public opinion seems to justify the present division between what is academic and what is strictly pedagogical, and to regard it as wise and just.

All pupils are required, upon entering the Normal School, to sign the following declaration of intention: "I hereby declare that my purpose in entering the Normal School is to make preparation for the work of teaching."

Six courses of study are offered, as follows: Scientific, four years; Literary, four years; Ancient languages, four years; Modern languages, four years; Special Course with Music, four years; and English, three years.

The Scientific course which is given below may be fairly regarded as showing the present average division between academic and professional work in all the courses of the Normal School.

SCIENTIFIC COURSE.

FIRST YEAR.

First Term.

1. Arithmetic.
2. Grammar and Composition.
3. Reading and Orthography
4. Vocal Music.

Second Term.

1. Algebra.
2. Geography.
3. Botany.
4. Elementary Drawing.

SECOND YEAR.

First Term.

1. Algebra.
2. History of the United States
3. Advanced Drawing.
4. Physiology and Hygiene, 15 weeks; Narcotics, 5 weeks.

Second Term.

1. Geometry.
2. Rhetoric.
3. Elementary Physics.
4. Penmanship, 10 weeks; Zoology, 10 weeks.

THIRD YEAR.

First Term.

1. Geometry.
2. Comparative Zoology and Physiology, 10 weeks; Civil Government, 10 weeks.
3. Outlines of History.
4. Mental and Moral Science.

Second Term.

1. Higher Algebra.
2. English Literature.
3. Professional Training in Common Branches.
4. Mental Science applied to Teaching, and School Management.

FOURTH YEAR.

First Term.

1. Chemistry.
2. Higher Physics.
3. Geology, 10 weeks; Bookkeeping, 10 weeks.
4. Practice Teaching and Criticism; Essays.

Second Term.

1. Chemistry, 10 weeks; Astronomy, 10 weeks.
2. Trigonometry and Surveying.
3. Political Science, 10 weeks; Training in Physical Science and History of Education, 10 weeks.
4. Practice Teaching and Criticism; Essays.

The catalogue for the current year thus outlines the course of instruction in Principles of Teaching and a portion of the Special Professional Training which the school offers:

INSTRUCTION IN PRINCIPLES OF TEACHING.

This course embraces a discussion of the

1. Nature of purposes of education.
2. Forces and agencies employed in the work and process of education.
3. True province of schools and teachers.
4. Nature, powers and faculties of the child.
5. Laws, or conditions, which govern the development and training of those powers and faculties.
6. General application of these laws to means and methods of teaching.
7. Organization, government and general management of schools, including a consideration of the duties, rights and obligations of teachers.
8. School system and school laws of Michigan.

9. Progressive development of improved methods of teaching, illustrated by reference to the lives, labors and principles of the great leaders in educational reform and progress.
10. Something of the history of schools, of school systems, and of education.

The work indicated necessarily includes an elementary study of mental and moral science."

SPECIAL PROFESSIONAL TRAINING.

1. Pupils are required to note carefully the methods of instruction pursued by teachers, and to be able, when a subject is completed, to give an accurate account, either orally or in writing, of the following points:
 - (a). The order in which the topic was discussed.
 - (b). The illustrations and devices used to enlist the attention of pupils, and to make plain the truth presented.
 - (c). The method of drill employed to fix the truth permanently in the memory.
2. The principles of teaching and school organization, based on the constitution and laws of the body and mind, are carefully discussed. This is supplemented by special professional training in the common branches to secure in the pupils habits of teaching and governing in harmony with the principles discussed. This part of the work includes the following:
 - (a). A discussion of the order which should be pursued in presenting given subjects to a class.
 - (b). A discussion of the illustrations and devices that should be used to enable pupils to understand thoroughly the subject presented, and to fix a clear outline of it in the memory.
 - (c). The preparation of sketches or outline lessons which are submitted to teachers for criticism.
 - (d). Teaching and governing in the Practice School under the guidance and instruction of competent teachers, whose duty it is to observe carefully, criticise and correct all defects.

NOTE—Any person who, as provided for under requisites for Higher Standings, sustains examinations or presents Certificates of Standing in *all* the academic subjects of any course, can complete the professional work of a course in one year. It is desirable, however, in order to get the full benefit of the professional and other work of the school, that a pupil should spend *Two Years* in the institution."

In the summer of 1871 a new departure was made in the constitution of the School of Observation and Practice. A plan similar to that followed at the Oswego Normal School was devised and tried for two years. An agreement was entered into between

the State Board of Education and the School Board of the city of Ypsilanti, whereby the schools of the city were to become Schools of Observation, and to some extent, Schools of Practice for the pupils of the Normal School. This plan proved unsatisfactory and was abandoned after a comparatively brief trial. Of this plan and of the probable results of any future attempts in the same direction, Professor D. Putnam, at that time director of the School of Practice and an earnest worker in behalf of the success of the new arrangement, has since said (State Superintendent's Report for 1881, p. 76): "No such arrangement can be adopted here with even the slightest reasonable anticipations of making it profitable or satisfactory either to the city or to the Normal School. The Practice School must be entirely under the same management and control as the Normal. Any divided authority or interest will be fatal to efficiency and usefulness."

This attempt to use the local public schools as Schools of Observation and Practice connected with the Normal School, is worthy of notice here, because from time to time the suggestion is renewed by those who are probably unaware that the experiment has already proved unsuccessful under circumstances as favorable as any are likely to exist at any future time.

The present School of Observation and Practice dates its beginning in the year 1872 immediately after the abandonment of the plan noted above. It is now a regularly graded school, comprising, however, only the eight years of primary and grammar school work. Its instructors are the students of the Normal School in the last year of their course. These teach under the immediate supervision of the director and his two assistant critic teachers. This supervision is also, to a considerable extent, supplemented by that of the teachers of several of the departments in the Normal School.

As to the question whether Normal School graduates actually engage in teaching and whether the Normal School actually affects as it ought, the schools of this State, the following statistical table collated in 1884, and published in Superintendent's Report for 1884, p. 65, is instructive. The facts contained in it are valuable and make an excellent showing for the Michigan Normal School.

STATISTICS OF TEACHING.

1. Number of graduates in the full courses from the State Normal School from 1870 to 1880 inclusive.....	294
2. Number of those who are known to have engaged in teaching.....	270
3. Number from whom no report has been obtained.....	10
4. Number known not to have engaged in teaching.....	14
5. Per cent. known to have engaged in teaching.....	92
6. Average length of time taught, on the basis of the whole number of graduates.....	5 years
7. Average length of time taught, on the basis of the number engaged in teaching.....	5.5 years
8. Number of male graduates.....	126
9. Number of males known to have engaged in teaching..	113
10. Number of males from whom no report has been obtained.....	2
11. Number of males known not to have engaged in teaching	11
12. Per cent. of males known to have engaged in teaching..	89
13. Average time taught, on the basis of the whole number of male graduates.....	5 years
14. Average time taught, on the basis of the whole number of male graduates who engaged in teaching.....	5.6 years
15. Number of female graduates.....	168
16. Number of females known to have engaged in teaching	157
17. Number of females from whom no report has been received.....	8
18. Number of females known not to have engaged in teaching.....	3
19. Per cent. of females known to have engaged in teaching	93
20. Average time taught, on the basis of the whole number of female graduates.....	5 years
21. Average time taught, on the basis of the number of female graduates who have engaged in teaching.....	5.4 years
22. Number of male graduates known to have died.....	8
23. Number of female graduates known to have died.....	4
24. Total time that could have been taught if all these graduates had been teaching from the date of their graduation to the present time; <i>i. e.</i> , if all had at once gone to teaching, if none had died, stopped for a season, or abandoned the profession.	3,380 years
25. Males could have taught.....	1,246 "
26. Females could have taught.....	1,334 "
27. Time actually taught by these graduates.....	1,488 "
28. Time actually taught by male graduates.....	639 "
29. Time actually taught by female graduates.....	849 "
30. Per cent. of actuality to possibility on the basis of the whole number of these graduates.....	62

31. Per cent. of actuality to possibility on the basis of male graduates.....	61
32. Per cent. of actuality to possibility on the basis of female graduates.....	63.6
33. Whole number of graduates in all courses from 1854 to 1884, inclusive.....	1,188

Professor Daniel Putnam, Acting Principal, furnishes the following of the increase in attendance in the Normal School proper since 1870 :

Year.	Attendance.	Year.	Attendance.	Year.	Attendance.
1870-1.....	231	1876-7.....	366	1882-3.....	398
1871-2.....	296	1877-8.....	338	1883-4.....	475
1872-3.....	329	1878-9.....	292	1884-5.....	519
1873-4.....	364	1879-80.....	298	1885-6.....	628
1874-5.....	409	1880-1.....	318		
1875-6.....	449	1881-2.....	330		

These figures indicate the steadily increasing prosperity of the school so far as numbers are concerned, the last year of its existence exhibiting a much larger attendance than any preceding year. Other and more vital indications of genuine success and usefulness are not wanting. Those who have watched with friendly interest the progress of the Normal School through its career of a third of a century, have seen a steady advance in good scholarship, in a growing professional spirit without which a true Normal School is impossible; more and more, as the years roll on, its graduates are called to large responsibilities in the educational field. It has the earnest support of a great and influential body of thoroughly loyal admirers who are watchful of its interests and proud of its successes. All present indications point to a still more prosperous future, full of help for the great work of universal education in Michigan.

ADDRESSES AT AGRICULTURAL HALL.

HON. S. T. READ, PRESIDING.

LADIES AND GENTLEMEN, PIONEERS OF MICHIGAN: It is eminently fitting that we, the people of one of the greatest States of the Union, should come up to our beautiful capital, from every town and hamlet within its borders, to celebrate the fiftieth anniversary of its birth. It is fitting to pause and look back through all those years to the beginning of all this goodly heritage; and from the progress of the past gather lessons of value to guide us in the development of that higher civilization for which we strive. But it is particularly appropriate for us, old pioneers who came to Michigan years before it was admitted as a State, when it was still a trackless wilderness, with only here and there a trading-post; and who cleared the way and laid the foundations for this great commonwealth, to gather here to-day, to note and rejoice over all that the brain and muscle of Michigan's sons and daughters have wrought for their beloved State. No other American State has made a more gratifying progress than that of Michigan. With a population of but 31,000 in 1830, it now has about 2,000,000, and its increase in wealth has been commensurate with its growth in numbers. The commercial position of our State, with its 1,400 miles of lake navigation along its shores, and a water communication with the Atlantic ocean, together with its central position on the American continent, giving it access to a vast internal trade, is one possessing remarkable advantages, which our people have not been slow in improving. In the variety, richness and abundance of her natural resources, Michigan stands the peer of any State in the Union, if not actually superior to all of them. Her manufacturing industries are rapidly increasing. Our public school system is the pride of the State; while the little educational sprout that was planted at Ann Arbor forty years ago, and which we have nurtured with so much care, has grown and flourished, until its hospitable branches shelter not only youths from every part of our land, but from foreign lands as well. Our pub-

lie buildings, churches, charities, reformatories and penal institutions are a credit to the State; and, beyond all, we are free from debt (practically). The future of our State is bright with promise. Possessing, as it does, almost inexhaustible natural resources, it should be the home of a contented and prosperous people for ages to come.

FISH AND FISH CULTURE IN MICHIGAN.

JOHN H. BISSELL.

The abundant natural supply of fish in the waters of this State has played so important a part in its settlement and development that any history of the State, or its people, which omitted mention of its fish or fisheries, would be incomplete. In the present and near future the operations of the State's establishments for fish culture, are, and will be, useful and important factors in the further development of the State, and assist in solving one at least of the urgent economic problems which must be met by every community as its population increases,—that of cheap and wholesome food supply.

We know something of the great quantities of fish that were found in our waters by the early settlers, and those who came to trade with the Indians before any permanent settlements existed outside of the fur trading posts, from the accounts that have been happily preserved for us in that charming field of history, the discovery, explorations and settlement of "New France." The great abundance of fish during those times is also evident from the fact of their easy capture, in comparatively large quantities, by the rudest of fishing appliances. The Indians of this region lived very largely upon fish; and so, too, did the fur traders. Their highways were the lakes and rivers which served as well as supplied larders, always at hand. Jacques Cartier says, in 1535, the Indians on the St. Lawrence River "had in their houses vessels as big as any butt or tun in which they preserved their fish." From which it is evident the fish were captured not only for the summer use, but to carry them through the winter. Other writers of the sixteenth and seventeenth centuries have told us of the periodical migration of Indian tribes, living in Upper Canada, to convenient places on the lakes and rivers, to lay in stores of fish for

their winter use. La Hontan, a French officer who visited the lakes in the year 1688, mentions a tribe of Indians "who procured their subsistence mainly from the fish which abounded at the foot of the rapids" of the Ste. Marie's River. Pere Marquette (1671), La Salle (1679) and Charlevoix (1721) made frequent allusions in their narratives, to the bountiful supply of fish and its recognized importance to themselves and to the natives.

The earliest notice I have found of the fish in Lake Erie is by Baron La Hontan in 1688. La Hontan says: "It abounds with sturgeon and white fish, but trouts are very scarce in it as well the other fish that we take in the lakes of Huron and Illinese" (Michigan). Down to the time of the organization of Michigan as a State, all sources of information now attainable agree in the statement that the fish were so plentiful the supply was deemed inexhaustible. That was before the days of rapid and improved methods of transportation, the absence of which necessarily restricted the market. That was, also, before the introduction of modern fishing appliances. Then the catching of fish was for home consumption entirely, and of course with a thin and scattered population the demand was a limited one, easily supplied from time to time. The apparatus then used in fishing was limited in quantity, rude in construction, and as compared with modern fishing rigs as the boy's sail-boat to an iron steamship. From the earliest settlements to about 1830, industrial fishing was almost exclusively confined to the Indians and the employees of the Hudson's Bay, American and Northwest Fur Companies; the former organized in 1696, the latter in 1783. These companies were established for prosecuting fur trade with the Indians, the first great incentive to exploration and settlement of the upper lakes; but, as that industry became less profitable, they turned their attention to catching and trafficking in fish. Blois' Gazetteer of Michigan, published in 1835, says of the fish product of the great lakes: "Their quantities are surprising and apparently so inexhaustible as to warrant the belief that were a population of millions to inhabit the lake shores, they would furnish ample supplies of this article of food without sensible diminution." We may smile at such a belief now with the experience of what fifty years of fishing have done, but the statement probably embodied the general opinion of the community of that day upon this subject.

Mr. Lanman in his history of Michigan published in 1839 says,

that then the lakes abounded with fish of various kinds, mentioning sturgeon, Mackinac trout, "muskallonge" and whitefish, the latter only being important as an article of commerce. At that time industrial fishing was mainly confined as to locality, to the Detroit, St. Clair and Ste Marie rivers, the Straits of Mackinac, the extreme southeastern end of Lake Superior and Saginaw Bay. "Whitefish," he says, "were caught in large quantities around Mackinac, Sault Ste. Marie and the other waters connecting the great lakes. They are packed in barrels and transported to New York and Ohio."

The Detroit river formerly maintained extensive and profitable white fisheries. The fish were not only abundant but of a superior quality. These fish, although sometimes called the Detroit River whitefish, are really Lake Erie fish. They pass the greater part of their lives in Lake Erie, feeding and living there, and only moving up the river late in October, through November, and part of December, for the purpose of spawning along the channel banks of the river. It must not be understood that all the whitefish in Lake Erie make Detroit river their breeding grounds, for vast numbers of them found suitable spawning places on the reefs, ledges and shoals about the islands at the western end of the lake. As the whitefish possesses in common with all the members of the salmon family to which it belongs, the instinct to return and deposit its ova in the place of its own nativity, it may not be inappropriate to designate such of the Lake Erie fish as seek the river for the purpose of reproduction, as the Detroit River whitefish, although no structural difference distinguishes them from the other whitefish of the Lake.

As late as 1836 and 1837, such statistics as we have, indicate that the Detroit river yielded nearly one-half of the total number of pounds of fish caught in the Great Lakes for those years. In 1859 the value of the catch in the river was put at \$75,000, all whitefish. In 1867 Mr. George Clark, a man of great experience and an accurate observer, estimates the yield of the river at 500,000, averaging in weight three pounds. The Board of Trade Review put the number of whitefish received at Detroit in 1863 at over 900,000. This would of course include nearly all of the fish caught in Lake St. Clair besides those taken in Detroit river.

Mr. Lanman's "Red Book" of 1871, notices that the whitefish are becoming scarce in all the rivers. The account says that "for-

merly as many as 8,000 fish have been taken at a single haul of a seine. At present (1871) 2,000 is considered a big haul." To note and emphasize the difference, which has come about in these fisheries in the past fourteen years, let me call your attention to the fact, that one of the best fisheries of the river, in 1885, produced less than 2,000 whitefish for the entire season's fishing.

The River St. Clair has always produced great quantities of fish, the pike-perch or wall-eyed pike being the most abundant. In 1830, and for a number of years thereafter, immigration to the shores of the Detroit and St. Clair rivers increased very rapidly. The settlers found it difficult to obtain a supply of other food, and from necessity were largely dependent upon the product of the fisheries. The Rev. O. C. Thompson, in a paper read before the Detroit Pioneer Society in 1828, says, "More and better fish were taken from the St. Clair river than at any other fisheries, and the fish were larger than those of the Detroit river," and they were sold at \$1.50 per hundred fish. The St. Clair fisheries have passed into history, (as have most of those on the Detroit river), excepting perhaps two or three points where the pike-perch or pickerel, as they are locally named, are caught by seining, in limited numbers. The present season, which closed last week, has proved the poorest ever known. From the earliest times of which we have any record, the Lake and River St. Clair have been noted for the abundance and good quality of their fish, and even now the St. Clair flats are famous for black bass fishing.

The first industrial fishing on Lake Huron was commenced in 1835, with small sail boats and gill nets. The principal product was whitefish and salmon trout, which were salted and sold in Detroit.

The great fur trade which centered at Mackinac, early brought into prominence the fishing grounds of that locality. From its great abundance there the lake or salmon trout was named the "Mackinac Trout." Father Marquette mentions besides the white fish, "sturgeon, herring and three varieties of lake trout," as abounding in the waters of the straits, and fifty years later Charlevoix was surprised by the number, and charmed by the qualities of the whitefish of those waters. The experience of one fisherman will illustrate most strikingly the change which the use of modern fishing apparatus has wrought in these waters.

Mr. Noel La Ville informs us, that he began fishing at Macki-

nac in 1843 with 12 gill nets, and could then take more fish than he can now with 240 gill nets. The value of the Mackinac catch has averaged about one-tenth of the total product of our waters until 1873, since which time its relative importance has steadily declined, though not in a more marked degree than other points once as prolific.

No figures representing the fishing products of Lake Michigan are found earlier than 1859, at which time Mr. Strickland's "Old Mackinac" places the catch at 30,500 barrels, valued at \$270,000, and the twine in use in the Michigan waters of the lake at 6,670 gill nets, no steam vessels being then used there.

As late as 1871 Lanman's "Red Book" classes Beaver Islands, Green Bay and other points on the east shore of Lake Michigan as inferior in product to Mackinac, Detroit River and the west shore of Lake Huron. A very striking change is reported in the relative quantities of whitefish and herring in Green Bay on the Menominee shore during the past ten years. In 1875 whitefish comprised three-fourths of the catch, in 1885 the herring were about seven-eighths of the total.

But little is known of the fishing industry of Lake Superior prior to 1833. Blois' Gazetteer published that year reports "the only productions of the Upper Peninsula which are a source of profit, are the fish and furs, the latter is on a decline, but the former gives evidence of an inexhaustible supply of the finest quality." In 1841 the American Fur Company took two schooners over the rapids of the Ste. Marie to use in fishing on Lake Superior.

From the foregoing it appears that around our coast of two thousand miles, at the time Michigan became a State, the waters were teeming with fish in quantities deemed inexhaustible by the people of that generation. Fifty years have made as great a change in those fisheries as has been manifested in some other industries, but the change here has been an unfortunate one. As reliable statistics as could be found of fishing product prior to 1875 are given in a note to this paper: a comparison of them very briefly, with a valuable report made by Mr. Lyman A. Brant, as statistical agent of the State Board of Fish Commissioners, on the fishing season of 1885, will enable us to gather a lesson worth learning. For example, take the east shore of Lake Michigan. It appears that in 1859 this coast yielded 17,200 barrels of fish; in 1885

12,789 barrels; in 1859 the fishing was done with 5,350 gill nets and 58 sail boats; in 1885 there were in use 11,074 gill nets, 107 pound nets, operated by 23 steam tugs and 91 sail boats. While the capacity of the apparatus was increased in efficiency more than 200 per cent., the product fell off more than 35 per cent. The earlier operations were conducted comparatively near the shore, those of the last season, with improved sail boats and steam tugs, 25 and 30 miles out into the open lake. With a coast line the same in both cases the acreage of waters covered is probably more than trebled.

Mr. Lauman's "Red Book" of 1871 estimates the total fish product of the State as \$1,000,000 per annum. The Michigan Census Report in 1874 places the catch of 1873 as 114,669 barrels, which at the prices ruling then would make the value of the product something over \$1,000,000.

The catch of 1885 was 26,381,875 pounds, or in barrels 109,923, valued at first cost at \$791,456, to gather which required over 1,800 men, 1,109 pound nets, 27,635 gill nets, 333 fykes and seines, with 68 steam and 725 other boats, and an invested capital of \$1,200,000 (the estimated amount of capital invested in our fisheries in 1873, by the census return was \$334,091).

The most complete investigation into the value and extent of catch, capital invested, and other points connected with the fisheries, of which any record has been found, was that made under the direction of the State Fishery Board in 1885; and it is desired to make public acknowledgment of the intelligent and untiring efforts of the agent, Mr. Brant, for the valuable service to the State. The common methods of fishing prior to 1830 were with spear, hook and line; dip nets, seines were used to some extent, and at a few points upon the upper lakes gill nets were used as early as 1781. The Indians of the upper lakes used gill nets made from strips of elm bark. In McKenzie's *Voyages* is found a good description of the stone and float gill nets, which correspond exactly to many nets of that kind still in use at points on the upper lakes. McKenzie's nets were sixty fathoms long by fifteen meshes of five inches in depth. The gill nets now generally used have a leaded line upon the bottom, with cork floats on the upper line to which the net is fastened.

Pound nets were introduced into Lake Erie between the years 1840 and 1850, and were first used in the upper lakes, about the

Straits, in 1858 or 1859. Their increased use can be judged from the number reported in 1885, being 1,109.

A glance at the reported product after the introduction of pound net fishing, shows plainly the effect they have had upon the fisheries. In 1859, the year of their introduction, the product increased sixty-nine per cent. over the average preceding five years. In 1860, when they came into more general use, an increase of 244 per cent. over the average of the preceding six years was shown, and about 127 per cent. over that of 1859. The years 1861 and 1862 show a marked decrease from the yield of the two preceding years. Unfortunately we have no reliable figures at hand or to be obtained which would bring the comparison further down by years consecutively, but we have the general results of 1885, which show conclusively that with the increase of net and area of waters fished, the product has not risen in anything like due proportion, but on the contrary exhibits a large ratio of decrease. No waters can long withstand the indiscriminate use of this kind of net.

The area of land comprised in the State of Michigan is 56,457 square miles. The superficial area of water within the territorial limit of Michigan, over which the State has complete executive, legislative and judicial jurisdiction, is not far from 33,000 square miles. Our coast line, including bays and islands, is 2,000 miles in length. The value in money of the fishing product of these waters in 1885 was about \$800,000. The product of the same fisheries with the same efficiency of apparatus as in 1885, if the quantities of fish available had been equal to what we have seen they were at any time previous to 1859, could not have been less than twelve or fifteen millions of dollars.

The varieties of fish indigenous to our waters in the order of their commercial value are: Whitefish, lake trout, pickerel, herring, sturgeon, perch, bass, pike, catfish and suckers. The literature of this subject is so complete in these days, when every State in the Union is publishing fishery reports, besides the numerous exhaustive treatises published by the United States government through its fish commission, that any description of the characteristics, qualities and habits of these well-known varieties would be an unpardonable repetition of what is generally known. I therefore pass to fish-culture, as it has been, and is, in Mich-

igan, and as my experience and judgment teach me it ought to be in this great State in the near future.

The earliest effort to rear whitefish by artificial methods was made in 1857 by some gentlemen in Connecticut; but it failed, as most first experiments do.

The first experiments in Michigan were undertaken by Mr. N. W. Clark, at Clarkston, Oakland county, in 1869, and were attended with enough success to induce him to repeat them the following year. The eggs were procured from the fishery of Mr. George Clark, opposite Ecorse, Detroit river, and the result was better than in 1869. In 1871, having improved his quarters and learned that in temperature of water he must come as near as practicable to natural conditions, he impregnated about one-half a million of eggs, and hatched, in a healthy condition, about fifty per cent. In 1872 the number of eggs taken was one million, of which nearly one-quarter million were successfully shipped to California, in a partly developed state, for hatching and planting there, by the United States Fish Commission. These experiments were made with the apparatus then commonly used in hatching trout, consisting of a series of shallow trays having wire screen bottoms, upon which the eggs were spread, placed in a long trough, through which the water flows with a gentle current. Contemporaneous experiments were being prosecuted in Canada and New York, which somewhat aided in the general results. In 1872, Mr. Holton, an assistant of Mr. Seth Green, in New York, devised a great improvement in hatching apparatus, which permitted the handling of a much larger quantity of eggs. It consisted of a deep box in which the trays were placed on each other, the water being introduced from the bottom, and circulating upwards through the wire bottoms of the trays. Shortly after that, Mr. N. W. Clark invented a hatching apparatus in which the water was taken from the top and run down through the trays, and was allowed to escape into the next box and repeat the same operation.

In 1870 some leading fishermen of Detroit had erected temporary troughs which they supplied with ova, but it was readily seen that the work must be undertaken for the supply of the great lakes, if at all, by the State government, and efforts to that end were accordingly made, but without success. This effort to induce the State to engage in fish culture, was the best demonstration

that could be made that the fisheries were declining, and resort to artificial aid was required to preserve the stock of fish. Mr. J. P. Clark, Mr. George Clark, Mr. A. M. Campau and Mr. James Craig of Detroit were the promoters of this effort. The success attending the whitefish experiments interested a number of observing men, who took the time to urge the subject of fish culture as a branch of public business upon the attention of the Legislature, with the result that in 1873 an act was passed constituting a State Board of Fish Commissioners. While this step was urged by many intelligent citizens, the influence of Gov. Bagley was probably more potent than that of any other, and by the act the Governor was made one of the Commissioners. Besides the Governor the first Board consisted of Mr. George Clark of Wayne, and Mr. A. J. Kellogg, then of Allegan County. Mr. George H. Jerome of Niles, who had at first been appointed a Commissioner, resigned and accepted the position of Superintendent of Fisheries, and vigorously inaugurated the work which has since made Michigan somewhat conspicuous as a leader in this department.

During the winter of 1873-4, before the State had established its hatching stations, one million and a half of whitefish ova were hatched for the State by Mr. N. W. Clark at Clarkston, and the following year about two millions were hatched in the same way. During these first years of the Commissioner's work, by the courtesy of the U. S. Fish Commission, Michigan received considerable allotments of ova of the Atlantic and California salmon, and of the fresh water salmon of Maine, all of which were hatched at the State hatchery then established at Pokagon in Cass county. These fish were planted in many brooks and rivers, and some lakes.

True to their instincts, they left the streams, dropping down into Lakes Michigan, Huron and Erie, and not much trace of them has since been found. A few have been caught at different times for some years, and even last season two or three were reported by fishermen. We do not regard it as conclusively proved that the Atlantic salmon cannot be established in the great lakes above Niagara Falls. What we do know is that the experiment was made with so few fish for the size of the waters, that it would only be surprising if it proved anything, which it does not. The Schoodic salmon, on the other hand, in the case

of one lake in Kalkaska county, have made a marvelous growth, from which those competent to form an opinion are confident of the ultimate establishment of this fish in some of our large northern interior lakes, as well as in the waters of the Straits and Lake Superior.

In 1875 the whitefish work was started in Detroit under the immediate supervision of Mr. Oren M. Chase. Nearly ten millions of eggs were laid in that fall for hatching by the Holton Box method. The work of that and the three succeeding years is important, principally, for the experience it furnished Mr. Chase, leading as such experience did, to the most valuable improvement which has yet been discovered in hatching whitefish eggs, or other fish eggs of similar specific gravity and habit. The older methods were expensive and cumbersome when applied to extensive operations. They were all, however, successive steps of progress.

The invention of Mr. Chase was a glass jar with a capacity of from one to one and a half gallons, into which the water was introduced through a glass tube, bell-shaped at the bottom, resting on small knobs or feet, which permitted the water to escape upwards, through the jar on all sides, to be discharged over a metal spout. This upward current of the water gives a gradual but constant motion to the eggs, which is necessary to prevent adhesion, and is more natural than nature. The flow of water separates the bad from the good eggs, and does away with constant manipulation, which is expensive and inconvenient, and makes it possible to handle a large number of eggs in a small space, the water doing the greater part of the work. The Chase Automatic Jar makes it possible to produce at a very reasonable cost, enough young fry to restock the depleted fisheries of the Great Lakes. The average capacity of the glass jars used in the white fish operations at Detroit and Petosky, is 134,000 eggs. The present whitefish operations are conducted at Petoskey with 208 jars, and at Detroit 312 jars, giving a total capacity of 69,680,000 eggs each season, which exceeds the amount of any of the other States, and is only exceeded by the General Government fishery work. The average loss on the first count is from 10 to 15 per cent.

The most popular department of fish culture is the rearing of brook trout, because its results are more quickly seen. Already

in many counties in the northern, central, and western parts of the lower peninsula good trout fishing is found, in streams where this fish was unknown before it was planted by the State. The trout work was conducted at Pokagon until 1880, when that property was given up and a location made at Paris, Green township, Mecosta county, where the State has acquired title to 119 acres of land, for the purpose of controlling suitable streams. Here extensive ponds have been and are being constructed, for the purpose of holding stock fish for breeding, and the streams utilized as wild nurseries. The station at Paris is within a quarter of a mile of the depot of the Grand Rapids & Indiana railroad, convenient shipping facilities being important for the extensive work done there.

An abundance of brook trout serves two desirable purposes for the people, in furnishing them nutritious food to vary the monotony of farm fare, as well as giving an opportunity for healthful sport; and, secondly, in attracting visitors to the localities for fishing, whose expenditures of money help the business of the community.

The present State fishery establishment consists of a Board of three commissioners appointed by the Governor and a force of about nine men regularly employed, the Commission having an office in Detroit, with a Secretary whose entire time is devoted to the work of the Commission. The stations are at Detroit, where the culture of whitefish and pickerel is conducted. This house has a capacity of 42,000,000 of whitefish. Its capacity for pickerel work is greater than the number of eggs obtainable has ever permitted, the largest take of pickerel eggs having been 28,000,000; at Paris, Mecosta county, where all kinds of trout work is carried on, including experiments with the grayling. This station has a capacity for handling 1,500,000 brook trout, 800,000 lake trout, and all the land-locked salmon and grayling that can be procured; at Petoskey for whitefish with a present capacity of 26,000,000; at Glenwood, Cass county, where there is located a station for the cultivation of German carp, which station has a capacity fully equal to any demands the State may make upon it. Extensions of this work, which are contemplated by the Commission as necessary, will be made as soon as funds are provided, enabling the Commission to engage in the propagation of muskallonge and black bass, for the rearing of which Michigan has most

suitable waters. The time is near at hand when we shall be called upon to save the sturgeon fishing of the great lakes, the sturgeon bringing a higher average price in the market to-day, than the whitefish or trout.

What is the significance of these facts? Ten times the space might easily have been filled without exhausting the authorities or facts. Such facts and their meaning, as one charged with a measure of responsibility in the supervision of the State fisheries, I deem it my duty to lay before this audience. Even the briefest historical notice of the fisheries leads inevitably to one conclusion, and forces upon us the urgent inquiry, can our fisheries now be saved, or is their ruin inevitable? While we have not yet learned all there is to know about the culture of fish and the artificial propagation of them, enough is known, scientifically and experimentally, to place the practical art of fish-culture beyond the domain of mere curious research, and its results are already sufficiently demonstrated to enable us to answer without hesitation, that if given sufficient support by the State government, we shall find a reasonable and sufficiently affirmative answer to the inquiry above suggested.

When I speak of fish-culture as furnishing the sufficient remedy for the evils already pointed out, I mean to include in the term not only the artificial propagation of fish, but also the protection of them by reasonable, municipal regulation until they are marketable; and in the combination of these two things we have the complete definition of fish-culture as a practical art. The demonstration of what fish-culture can do for the State, is not generally understood. There are sufficient reasons why it has not yet been able to make a complete demonstration of what it can ultimately do, by accomplishing all the results that some of its enthusiastic friends have looked for. To satisfy any reasonable man that fish-culture can again restore our fisheries and fill the great lakes with marketable fish, it is not necessary that that fact should be actually done. If it is possible to restore the fisheries at two or three average places, there is no reason to doubt that when carried on upon a sufficient scale, it will be able to work the same beneficial results, at least for all waters similarly situated. In the sense that a complete demonstration can only be made by accomplishing the whole result sought, fish-culture has not yet had a fair chance.

1. It has not been conducted upon an adequate scale. Where

we are now hatching about 50,000,000 of whitefish per year, we need to hatch from six to eight times that number to restore the wasted grounds, as well as to replenish and keep good the stock in those waters that are not yet productive.

Again, artificial propagation has not had a fair chance in point of time. It is only within the first three years of the second decade of its existence, say from 1882 or 1883, that the practical operations of fish-culture have been anything more than the merest experiments. It is only within that time that the State has hatched and planted over 15,000,000 of whitefish in any one year. The same period will also cover the most extensive operations of the United States Fish Commission in that direction. The force of this will be readily appreciated when it is understood that from our present knowledge we have no right to expect important results from these plants before the expiration of four, probably five, and possibly six years from the time they were made. Operations during the first decade were, as I have said, but experiments, and they were successful beyond anything we could in reason expect. The only places where they were not entirely successful, were in some of the inland lakes, where with our present knowledge of the habits and needs of whitefish, those fish would not now be planted. But there are without doubt quite a large number of interior lakes where whitefish can be grown successfully and in large quantities. It must be remembered in judging of the results of fish-culture, that the ruin caused by wasteful and unconscionable methods of fishing, the results of which fish-culture is called upon to repair, has been going on for thirty or forty years; and it is always more difficult to cure than to prevent disease, whether physical, political or economical.

Again, fish-culture has not had a fair chance, because we have lacked proper municipal regulations of the methods of fishing. It is not enough that we should be able to put into the waters of the lakes each year enough young fish to take the place of the adults captured and marketed. The fish must be protected until they come to mature or marketable age, otherwise our work will be lost. Artificial propagation alone cannot accomplish the result. Neither can legal regulations do it alone, within a period that will avail anything for one generation, and possibly not even then. The two things are mutually dependent conditions. They must concur to assure valuable and lasting success.

There is not time here to review the arguments or state in detail what regulation is needed, but only to suggest that the destruction of immature fish must be prevented, and discretionary authority given to fishery officers to prohibit fishing at times and in places where unmarketable fish will be destroyed and some equitable system of license as incidental to municipal regulation, which will furnish the means to pay the necessary cost, not only of regulation, but ultimately of artificial propagation.

An important condition, which cannot be provided for by statute law, is the spread of reliable information regarding the purposes and operations of the State's fishery department among the people of the State, which will create a healthy public opinion in support of the laws, and their strict and just enforcement. The practical art of fish-culture, carried on under the conditions above indicated, can make the barren waters of this State productive again, arrest the depletion of fisheries now valuable, and cultivate to its natural capacity of productiveness, for the benefit of the State, this great public domain. The waters are here and cannot be alienated. Shall not the State cultivate them?

SCHEDULE 1.

FISHING STATISTICS FOR THE YEAR 1860.—FROM CENSUS REPORTS.

	Capital.	Bbls.	Value.		Capital.	Bbls.	Value
Bay.....	\$ 15,000	6,000	\$ 48,000	Marquette.....	\$ 1,000	620	\$ 3,66
Berrien.....	6,200	3,375	25,500	Mason.....	4,100	1,130	7,60
Chippewa.....	9,000	3,200	19,600	Oceana.....	2,200	950	6,65
Delta.....	5,700	2,509	15,368	Ontonagon.....	2,100	1,000	6,000
G'd Traverse.....	200	86	688	Ottawa.....	8,000	5,800	34,600
Huron.....	9,800	4,200	30,690	St. Clair.....	725	850	5,090
Leelanaw.....	4,050	1,326	10,608	Wayne.....	51,700	2,375	29,300
Mackinaw.....	47,000	17,843	103,938				
Manistee.....	1,600	793	6,344		\$178,375	59,057	\$395,636
Manitou.....	7,000	6,000	42,000				

SCHEDULE 2.

STATISTICS FOR THE YEAR 1863, BY COUNTIES.

	Bbls.	Capital.		Bbls.	Capital.
Alpena.....	2,000	\$ 8,000	Menominee.....	1,002	\$ 5,000
Bay.....	792	1,750	Monroe.....	2,050	4,180
Berrien.....	1,750	3,000	Muskegon.....	1,000	1,200
Cheboygan.....	1,200	1,200	Oceana.....	100	200
Chippewa.....	1,216	4,095	Ontonagon.....	85	300
Delta.....	130	400	Ottawa.....	1,483	1,675
Emmet.....	203	995	Sanilac.....	2,015	3,600
Houghton.....	347	725	Shiawassee.....	46	...
Huron.....	700	3,000	St. Clair.....	575	800
Iosco.....	6,000	8,000	Tuscola.....	100	800
Keweenaw.....	50	200	Van Buren.....	150	600
Leelanaw.....	390	860	Wayne.....	3,822	21,649
Mackinaw.....	9,000	60,000	Unorganized Counties...	2,600	8,500
Manistee.....	237	500			
Mason.....	825	1,200		*39,488	\$115,429

*It will be noticed that some of the most important counties in the State for fish product (St. Joseph, Saginaw and Grand Traverse) made no returns for this year.

SCHEDULE 3.

STATISTICS FOR YEAR ENDING JUNE 1st, 1870, BY COUNTIES.

	Value	Bbls.		Value	Bbls.
Alcona.....	\$3,630	440	Mackinaw.....	103,604	10,172
Allegan.....	1,461	113	Manistee.....	4,500	892
Alpena.....	37,700	3,800	Mason.....	5,541	593
Antrim.....	3,080	561	Menominee.....	34,771	3,575
Bay.....	9,850	1,015	Monroe.....	30,190	1,700
Benzie.....	1,200	120	Muskegon.....	3,950	375
Berrien.....	37,750	.....	Oceana.....	2,000	200
Cheboygan.....	13,450	1,575	Ontonagon.....	5,840	.....
Chippewa.....	18,663	2,560	Ottawa.....	36,990	8,100
Delta.....	15,399	1,711	Sanilac.....	28,250	3,425
Emmet.....	23,000	2,899	St. Clair.....	1,240	655
Grand Traverse.....	700	.....	Van Buren.....	6,550	675
Houghton.....	13,100	1,650	Wayne.....	11,106	400
Huron.....	15,905	2,128			
Iosco.....	92,800	9,300		\$569,623	58,854
Leelanaw.....	800	100			

Berrien, Grand Traverse and Ontonagon counties made no returns.

Number of fisheries reporting, 243.

Men employed, 961.

SCHEDULE 4.

The earliest statistics of the commercial value of the fisheries which have been obtained are from Blois' Gazetteer of Michigan (1838), and do not include returns from the Upper Peninsula :

	Bbls.	Per bbl.
1830.....	8,000	\$ 5 00
1836.....	11,400	10 13
1837.....	13,500	9 32

These fish were taken on the Detroit, St. Clair and St. Mary rivers, the Straits of Mackinaw, the southeastern part of Lake Superior and Saginaw Bay. The varieties are given for two years only, as follows :

	White and Trout.	Pickarel.	Herring.
1836.....	8,300	2,500	600
1837.....	9,500	3,400	600

The whitefish and trout are given together in the statistics. Of the whitefish, 4,000 bbls. in 1836 and 2,500 bbls. in 1837, were taken in the Detroit river. The trout were caught with hooks principally, the other kinds with seines and gill nets. The pickarel were mainly from Saginaw Bay and St. Clair river (pp. 56-7).

Population of Michigan in 1830, 28,000 ; 1836, about 60,000.

The same places on the east shore of Lake Michigan had in service in 1885 the following rigs:

	Gill Nets.	Pound Nets.	Steam Tugs.	Fish Boats.
Little Traverse region...	1,010	33	2	21
Ludington.....	494	4	..	9
Pentwater.....	131	19	1	11
Whitehall.....	445	14	1	11
Grand Haven.....	1,906	12	4	20
Saugatuck.....	1,017	12	5	9
South Haven.....	775	..	1	2
St. Joseph.....	2,814	13	8	8
Grand Traverse region ..	2,482	25	2	53
	11,074	132	25	144

The Grand Traverse region includes Traverse Bay, Frankfort and points on the Lake Shore south to Manistee, for which no returns were given in 1859.

SCHEDULE 6.

The catch for the points named in 1855, was:

FROM WHOM BOUGHT.	Whitefish Pounds.	Lake Trout, pounds.	Herring, pounds.	Other kinds, pounds.	Total pounds.	Equiva- lent in bbls.
Little Traverse region..	198,457	150,539	31,995	28,378	409,369	1,706
Ludington.....	41,621	17,230	..	500	58,851	245
Pentwater.....	52,347	23,189	2,950	68,258	146,744	611
Whitehall.....	15,386	8,087	7,927	80,138	111,838	466
Grand Haven.....	83,288	109,655	130,136	104,993	428,072	1,785
Saugatuck.....	146,237	52,750	100	116,000	315,087	1,343
South Haven.....	13,500	9,000	.....	1,000	23,500	98
St. Joseph.....	285,818	321,992	5,000	103,519	716,329	2,985
	836,654	692,442	178,408	503,116	2,210,620	9,209
Grand Traverse Region ..	591,968	247,443	3,900	12,781	855,092	3,580
	1,431,622	939,885	182,308	515,897	3,069,112	12,879

The above table is made up from the returns actually made to the Michigan Fish Commission, and while probably falling some below the actual catch, is undoubtedly the fullest ever yet gathered. The returns for 1859 were in barrels of 200 pounds, while the returns for this year were in pounds, as the fish were sold fresh. For the purpose of comparison the number of pounds has been reduced to barrels, allowing 20 per cent. for shrinkage and offal, which is probably less than the actual loss. The calculation is based on 240 pounds of fresh fish with entrails only removed for 200 pounds of salt fish.

SCHEDULE 7.

The following figures are given in the Michigan Census Report for 1874 as the catch for 1873:

	Bbls.
Lake Erie and Detroit River.....	12,110
St. Clair Lake and River.....	1,217
Sanilac and Huron Co.'s (Huron Peninsula).....	1,900
Saginaw Bay and River.....	12,370
Saginaw Bay to Cheboygan.....	25,170
Mackinaw	10,114
East Shore of Lake Michigan.....	27,052
Green Bay.....	9,961
North Shore of Lake Michigan to Detour.....	8,834
Sault Ste. Marie.....	5,683
Balance of Lake Superior.....	258
	<hr/> 114,669

About 28,000,000 pounds as at present sold fresh, estimating 200 pounds per barrel and a shrinkage of twenty per cent. between salt and fresh fish.

The amount of capital invested was given at \$334,091, but nothing said of number or kind of nets or boats.

The shipments of fish from Alpena in 1874 were 3,749 packages of salt and 1440 tons fresh. A fleet of 200 fish boats was engaged in and about the straits, including the Beaver Island group. Each boat had from 50 to 100 gill nets, and they averaged about 200 pounds per boat per day. The lake fisheries were then declared to be second only to the cod fisheries of the Atlantic coast.

(Vol. 6, Pioneer Reports, p. 188.)

J. A. Leggett, Mayor of Grand Haven, reported that there were in the business at that place in 1875 five tugs and eight sail boats. The total product for that year was 1,185,000 lbs. at 4c, and 10,000 gallons of oil at 55c per gallon. Number of men employed, 114. The product of Saginaw bay and river for the same year was 22,000 bbls. (McCracken's Statistics of Michigan, pp. 75-6.)

Prices for salt whitefish for the years named averaged as follows at Detroit.

1856.....\$9 12½	1859.....\$7 44½	1864 .....\$15 30
1857..... 9 86½	1860..... 7 96	1867..... 11 00
1858..... 7 31¼	1862..... 6 05	1868..... 14 75

(From Haddock's Board of Trade Reports.)

SCHEDULE 8.

The catch for 1885 actually returned to the Fish Commission, by 432 firms, employing 1,789 men, was as follows :

	Lbs.
Whitefish	7,455,459
Trout.....	4,881,273
Herring.....	4,633,135
Bass.....	35,819
Other kinds.....	4,815,783
	<hr/>
	21,821,469
Reported, but not classified.....	1,854,000
	<hr/>
	23,675,469
Approximate catch of fishermen not reporting..	2,706,406
	<hr/>
	26,381,875
Or 13,190 tons, value at 3 cents per lb.....	\$791,456 25

The following nets were in use :

	Reporting.	Not Reporting.	
Pound nets.....	1,004	105	
Gill nets	24,835	2,800	
Seines	59	4	
Fykes	220	.....
	Fathoms.	Feet.	Miles.
The gill nets measured.....	1,588,852	9,533,112	1,805½
The pound nets measured.....	177,440	1,064,640	201¾
The seines measured	4,909	5½

CAPITAL INVESTED.

This table is the best approximation that can be made, and is probably within the actual amount; it is based upon the observation of the agent, and not on reports of owners.

Value of nets.....	\$ 501,142
Value of boats.....	319,746
Value of docks and buildings	256,392
Value of other apparatus.....	56,690
	<hr/>
	\$1,133,970

This includes no lands for fishing coast or grounds.

CORRECTIONS AND CHARITIES.

HON. LEVI L. BARBOUR.

The subject of crime and its punishment leads us away back to the days of Cain, and so is coeval with the history of mankind; and good Samaritanism also has grown up with the development of the human race; but the subject of "Corrections and Charities," thus formulated, is of comparatively recent date.

It is a growth of ideas and systems aiming to counteract the growth of pauperism, crime, insanity, and to alleviate suffering and ennoble the race. It is the organization of the efforts made within the last few years at child-saving, prison-reform, the protection and training of the feeble-minded, the supervision of the administration of charitable and penal institutions and the correction of abuses found in connection with them; and other kindred objects.

While its province is to urge morality, for that tends to due observance of the law, it ignores sects and religious doctrines, because honest and intelligent men differ so widely respecting them; and, because there are so many zealous and law-abiding citizens anxious and striving for the development of the human race into a sphere of thought and action higher than that which now characterizes it, who would turn their backs upon the work were it to be done only upon condition that they should seem to subscribe to religious opinions which they cannot honestly hold.

The material and continued progress of society in correctional and charitable matters demands a sympathy of hearts and a union of hands—rather than sectarian discussions, which more often result in dissensions and discouragement, than in the attainment of any desirable object. That these matters must be kept independent of political control or influence, is too evident to any broad-thinking man to require more than the statement. They must also be treated as purely matters of business, and all sentimentality carefully repressed.

In order to comprehend fully what has been done by Michigan since her admission as a State, with respect to her public charities, and what advances she has made in the suppression of vice and the restraint and reform of criminals, one must consider her

condition at and before that time as to the population, its components and culture and moral status. One who should write of the charities and corrections of Mississippi during the last twenty-five years, and did not portray the condition of society as affected by the war and the emancipation of slaves, would fall far short of giving a faithful account of the work done and the results achieved.

It must be borne in mind that there is no distinct and separate field of corrections and charities, as there is for the judicial and the legislative and executive branches of the government, or the school system and the several industries, the advance of which go to make up our State's progress and history. What has been done in this particular field is largely, if not almost entirely dependent upon, or concurrent with the advancements in all the other directions indicated. Therefore, an account of what has been done, what miscarried and what remains to be done, calls for a presentation of the prior condition of society and its progress; the part played by the Legislature, in how far it has foreseen and met the charitable and repressive necessities of the State, and wherein it has fallen short; in how far the executive, by messages and a wise administration, has advocated and aided progressive measures or retarded them; and wherein the judiciary has by a strict and severe enforcement of the criminal laws, taught the people whom it protects and serves, that the law of the land must be respected and obeyed; and wherein judges have shown, by fear and by favor, that in their eyes a re-election was of more value than the faithful administration of justice.

Parkman well describes the early Detroiters at a time when Detroit and Mackinaw were all that was settled of Michigan, and when nearly all the whites were French. "He was," he says, "usually a happy man, taking life easily, laughing at its hardships, soon forgetting his sorrows, loving adventure, frolic, dancing, little troubled with the past or future, and little plagued with avarice or ambition. Aloof from the world, the simple colonist shared none of its excitements or tumultuous pleasures, and escaped many of its cares. Plenty, and even luxuries were not wanting. The long winter was a season of social enjoyment, and when, in summer and autumn, the traders, *voyageurs* and *coureurs de bois* gathered from the distant forests of the Northwest, the whole settlement was alive with dancing and feasting, and often with drinking, gaming and carousing."

There were none of the meekly pious followers of Penn, who gave such a staid and quiet, yet thrifty tone to the early population of Pennsylvania, no Dutch of the class which founded the wealth and aristocracy of New York, nor any of the New England puritans, with the stern and witch-burning zeal which characterized the race.

That elsewhere gorgeous religious creation, the Church of Rome, pervaded the wilderness in the persons of the Jesuit fathers, not only where was found a son of France, but wherever a being, red or white, contained within him a human soul divine.

The large population of half-breeds assures us that the Indians and French got on well together; and, indeed, at Detroit in those early days, on a peace footing were three Indian villages, the Potawattamies, the Wyandottes and the Ottawas. Judge Burnet, who had intimate personal acquaintance with the Indians, regarded them in 1795 as dignified and independent in their relations with the whites, and naturally not an inferior race; and he thought that if they were not degraded by the vices and excesses of the whites, they would be as capable of improvement as any people on the face of the earth. Another author says of them: "The Indians were for two hundred years after the first settlement of Canada, in several places, the only farmers. In Michigan their villages were neat, their lands were well laid out and cultivated. They possessed keenness of intellect, wonderful memory, and when educated, compared favorably with other nations upon an equality."

The *coureurs de bois*, who were guides and traveling traders, were a class from which might naturally be expected the most frequent violations of the laws in force which were taken from the *coutume de Paris*, so far as it seemed applicable to the character of the population and the country. They were, however, seldom guilty of treachery to the government, malice toward their kind, or any of the graver fiendish vices which now so distinctly and indelibly mark the criminal class of to-day. Though they were far from belonging to the highest type of humanity, they were generally popular for good fellowship and sympathy for the poor, fairly honest in their dealing, except occasionally with the government, and possessed of a very good reputation for certain manly virtues.

It will strike one at a glance, that during this primitive settle-

ment of the country by this class of people, no great amount of organized public action, either correctional or in the way of charities, could be expected, or was demanded. There were no great necessities and no crying evils.

The government of the country was in the hands of the military Commandant, until the Governor and Judges were appointed, when the territory came under the administration of the United States.

Among the first instances of executive and judicial action, were the arrest by Cadillac of some of the Canada company's agents for fraud, and his attempts to prevent disturbances from the excessive use of brandy, by stopping its sale, except in very small quantities, for a fair drink, and providing that no one should be served more than once until all others had been provided who desired it.

De la Gallissoniere was probably the first, and perhaps the only Governor to urge upon the home government the introduction of paupers. He only desired a few, as needed, and urged that other persons of doubtful character, except *faux saulniers*, salt smugglers, should not be sent out unless called for.

Slavery existed, but very few of the slaves were of African descent. They were mostly Indian captives, brought in and sold by Indians, and passed from hand to hand like other chattels. It continued until the Ordinance of 1787 took effect, by which it was abolished, except in so far as property in slaves was protected by treaty. In 1810, there were thirty-two slaves enumerated in the Territory; but in 1836, all had died or been freed. Michigan has never been disgraced by being a slave State.

Just when public whipping began, it is difficult to ascertain; but it continued to disgrace the country until 1831, when, as Judge Campbell says, "this relic of barbarism was forever removed." He also mentions that the not less barbarous customs of selling the poor to the lowest bidder, and the disgusting ball-and-chain gang were long continued.

In 1760 Michigan, with all the other French possessions in Canada, came under the English flag; and from that time the increase of population by way of immigration was mostly English and Scotch. The careful business ways of the Scotchmen and the restless enterprise and industry of the English commenced,

slowly, but surely, to work a change in the character of the country.

The English Governors, upon taking possession, commenced to disregard the French law, which they knew nothing about, and substituted the English law so far as they knew anything about that, which seems to have been almost nothing at all. They, for the most part, evolved a "higher law" from their inner consciences, which was frequently a conscienceless and arbitrary execution of their own capricious wills, regardless of justice or public policy. A few cases, however, which in the course of events were appealed and decided in the English courts against the Governors and others in authority, had a very salutary effect in protecting the inhabitants and compelling officers to keep within safe bounds.

Justices of the peace committed for trial as early as 1765, but do not seem then to have actually tried criminal causes. In March, 1777, however, two capital executions took place, resulting from the sentence of a justice of the peace, De Jean, who had no more right to pass such a sentence than a Springwells justice now has. De Jean, however, had this excuse, that he was ordered by Governor Hamilton to conduct the trial. The victims of this judicial murder were Jean Contencisau and Anna or Nancy Wyley. They were charged, the man, with stealing goods to the value of four pounds sterling, and the woman, a purse containing six guineas. The sentence was as follows: "You shall be hanged, hanged, hanged and strangled until you be dead, on the King's public domain (the Common) the 26th inst. precisely at twelve o'clock; and the Lord have mercy on your souls."

In 1778, Courts of Common Pleas, having a clerk and sheriff, were first established; but the judges knew nothing of criminal law, and banished, whipped, fined or pilloried those convicted before them as they chose. Cases of slitting the nose were not infrequent.

Hanging continued to be the punishment prescribed for murder, until 1846; but the last execution, that of Simmons, for killing his wife, took place at Detroit, September 24th, 1830,—“and music was furnished by the military band.”

The misdemeanors most commonly punished were horseracing, bowling and failing to keep water-butts full and buckets in order and within reach for use in case of fire. The punishments

inflicted seem to have been mostly by way of fine, but they were entirely "insufficient to prevent the festive Frenchman from racing their ponies and bowling cannon balls down the narrow streets of Detroit." At the time of the surrender of the Northwest Territory in 1796 to the United States, there were no white settlements within its boundaries of any importance, except Detroit, Frenchtown (Monroe), and Mackinac. The white population in 1800 was about 3,000, and in 1810 was nearly 5,000.

Under the territorial government the trial of capital criminal cases was reserved to the Supreme Court, presided over by three judges; intermediate cases to the District Court, of which there were three, presided over by one of the three judges, and cases of minor importance remained to be tried by justices of the peace. Presentments were made by grand juries. In 1805, dueling and challenging were for the first time made punishable. Punishments were frequently peculiar, and authorized by no better established precedent than the capricious will of the judge who tried the case. In 1806 the Supreme Court sentenced an Indian to be branded in the hand, for what crime, I believe, is unknown.

One marshal was originally provided for the Territory, who had the charge of all jails, prisons and prisoners; subsequently these were appointed, one for each district. The marshal was at first paid a salary, but by Act 29 of the Territorial Laws of 1805, the pernicious fee system, with a *per diem* for board, which still prevails, was established. All services, however, relative to the commitment and discharge of a public case, were limited to one dollar. From that small beginning has grown the long list of fees which now make the office of sheriff in the large counties a mine of wealth to the lucky politician who succeeds in getting it.

Prisoners in public cases were compelled to maintain themselves, if able; but where they set forth to three justices of the peace their inability to do so, the justices might, after investigation, give a certificate of the fact, and the marshal in such cases maintain them, and was allowed twenty-five cents a day for each prisoner. It is hardly probable that there were originally any other places of detention than the guard-houses at Detroit and Mackinaw, built of square, hewn, 12x12 hard-wood timber, with floor and ceiling of the same. The payment of several accounts shows that a new jail was built in Detroit in 1802, and after the fire the Governor and Judges in 1806 passed an act, among other

things, providing for the erection of a prison or jail at Detroit. August 29th, 1805, the Legislative Council passed an act to prevent rioting, revelling, disorder and drunkenness, by punishing the tavern-keeper, or retailer permitting it upon his premises, with a fine not exceeding one hundred dollars.

In 1809 an act was passed requiring that a jail be kept in good and sufficient repair by the marshal, under the direction of the judge, in each judicial district; the expense to be defrayed by the district. Every person committed to the jail, who had the means, was compelled to bear a reasonable charge for conveying him there, and pay for his own support until discharged; and the keeper was prohibited from demanding any other or greater fees or charges than allowed by law, under penalty of treble damages.

In 1819 a very carefully prepared law was passed by the Governor and Judges, regulating prisons, by which the county commissioners of the respective counties were required to erect and keep in repair a good jail. The sheriff was required to keep a true and exact calendar of the names of all prisoners, their places of abode, additions, time of commitment, cause, description of the person by whom committed, and time of discharge, or escape, should the latter happen. At the opening of the court it was made his duty to return a list of all prisoners in his custody, with the facts above required, by him to be kept, and the manner in which the prisoners were treated and employed; and it was made the duty of the county court, at the commencement of each term, to inspect the jails in their respective counties with reference to security, condition, and accommodation of the prisoners, and to cause such measures to be taken as would best tend to secure them from escape, sickness or infection. No prisoner was allowed the use of spirituous liquors, except on the written order of a physician, and the jailer permitting it was guilty of a misdemeanor, and punishable by fine of twenty-five dollars, one month's imprisonment, or both. The law provided for separate and solitary confinement, bread and water diet, hard labor in the jail, in a yard, or outside confined with ball and chain, the sheriff being required to furnish necessary tools. Upon a convict's refusal to labor, without a reasonable excuse, he was to be kept in solitary confinement on bread and water. It contained many other important provisions relative to the construction and management of jails; and was probably

taken altogether, the most important of all the laws enacted upon the subject. Had it been vigorously lived up to, this State would, in all probability, have been in as good condition, and been able to make as good showing as is made under the present prison laws of England. It has practically been a dead letter ever since it was enacted. No jail has been built that complied with its requirements, and therefore it has never been possible for any sheriff to manage a jail as contemplated by this law. The only objectionable feature was, that which provided for the working of prisoners outside the walls while confined with ball and chain. The question naturally arises, who is to be charged with the utter disregard of such a beneficent provision as this law seems to have been. Some reasonable excuse may be found for the proper officers while the country was new and attention was directed almost entirely to channels of private business, and matters of public growth; but from the time the Territory became a State, no reasonable excuse can be found for the universal neglect which has prevailed throughout the State to pay any attention whatever to the subject. The first blame rests upon the officers to whom was delegated the duty of providing proper jails, the county commissioners; and this mantle of blame falls upon the shoulders of their successors, the boards of supervisors; and it has rested with them ever since they were first organized. No man who has ever held the office of supervisor, can feel himself free from having failed in a most important essential to do his duty.

The laws of the State have always provided that prisoners may be sentenced to hard labor in jails, and provided for means for such employment through the orders of the Court. Through sentimentality, or fear of causing expense to the county, or other equally poor reason, have these laws and provisions been utterly neglected by Circuit Judges. Idleness, card-playing, Police Gazette reading, and worse, promiscuous association of all kinds of prisoners have resulted. Is it any wonder that with these "schools of crime" in full blast, our universities of vice should be full to overflowing, and the daily papers able to satiate a putrescent taste for the nasty, the wicked and the awful?

Another hindrance to reform in jails and jail management, is Article X, Section 5 of the Constitution, which provides that sheriffs shall be incapable of holding the office longer than four in any six years. The management of criminals of any class re-

quires experience. By the time a sheriff has obtained the necessary experience to be of value, this unfortunate clause compels him to give place to another, generally entirely ignorant of all the tricks resorted to by criminals to escape conviction or from prison. The section should be repealed, or some means found whereby the custodians of our jails may be continued in office during efficiency and good behavior.

The first general act providing for the punishment of crimes, was passed December 9th, 1808. Murder and treason were punished by death; rape by fine and imprisonment at hard labor during life; robbing and forgery by imprisonment not to exceed seven years; and for arson the culprit might be put in the pillory, whipped, imprisoned at hard labor for seven years, bound to good behavior, fined to the amount of three thousand dollars, or all of these punishments, according to the nature of the offense.

For other offenses imprisonment at hard labor, solitary confinement, and whipping, such corporal punishment not extending to life or limb as the Court or justices might direct, were prescribed. Proceeding against any person for conjuration, witchcraft, sorcery or enchantment was prohibited; but any one pretending to use skill or knowledge in the occult sciences, could be fined or imprisoned. Blasphemy was punished by fine, or imprisonment not exceeding three months at hard labor; and persons convicted of bribery were forever disqualified from holding office.

In 1815 spirituous or fermented liquors were forbidden to be sold to minors, apprentices, soldiers or Indians without the written order of the master or other proper person designated; and not at all on Sundays, except to travelers and lodgers in taverns.

In 1820 justices of the peace were charged with the duty of causing to be kept all laws for the preservation of peace and good order. Poor prisoners were entitled to have counsel assigned them in criminal cases. Another act compelled the observance of the Sabbath day between twelve o'clock the night preceding and the setting of the sun on the same day. It prohibited the resort to any public assembly, except for religious worship and moral instruction. Public worship was protected, and parents and guardians were liable for the fines imposed on children, wards or servants convicted of offenses against the act. Gambling was prohibited as "being injurious in a high degree to the persons engaged therein, and in its tendencies destructive to the com-"

munity." Money or property lost could be recovered, and if the loser did not commence suit within three months, any other person might recover treble the value from the winner, one-half to go to the county. Billiards, raffles and horse races were prohibited.

Poor debtors were not to be imprisoned for a debt less than five dollars; and when imprisoned and unable to support themselves, the creditor was compelled to give security for their maintenance, to be paid weekly in advance. Women could not be imprisoned on *mesne process* or for debt. And imprisonment for debt was abolished when the debtor assigned his property for the benefit of his creditor, unless in case of fraud. Farmer mentions in his history, that June 24th, 1824, there was not a single person in jail or prison in the whole Territory. "When we recollect," as he says, "that Michigan then included all of Wisconsin, it is evident that the officials were very lax or the people remarkably law-abiding." Ten years later the same thing occurred again. Though the first settlers were far from wealthy, pauperism was unknown among them. None but the sturdy and the plucky came into the wilderness. There were times of distress, but no time to beg; and no one entertained the opinion that the world owed him or his family any better living than he could procure for them.

Beggars came with the increase of population. There was no poor officer, before 1790; and subsequent appropriations show that he had no funds at his disposal.

The first provision made for the poor, as was very natural, was to care for individual cases. October 7, 1805, an appropriation, probably not the first, was made, not to exceed seventeen dollars, to pay Isaac Day for the support and burial of a pauper; and for the general relief of paupers a sum not exceeding one hundred dollars was voted. Soon after an act for the general relief of the poor was passed, providing that whenever any person should petition three justices of the peace, stating that he was destitute and incapable of labor, the justices, after inquiry, should grant the pauper a certificate approving his becoming a public charge, and the marshal of the Territory was empowered to contract for his support with the person offering the lowest terms, not exceeding twenty-five cents per day, but only to the extent of the unexpended appropriation of one hundred dollars.

In June 1820 the laws of 1805* and 1817 were repealed. County commissioners were given charge of paupers in their respective counties; and when relief was adjudged necessary they issued a warrant to the sheriff which directed him to take charge of and provide support for the pauper; and after six days' notification, to receive proposals for the support of the person for the ensuing year, and contract upon the most reasonable terms therefor. The commissioners were authorized to apprentice poor children during minority having no parents able to support them.

The State has never pursued a uniform policy in regard to the care of its poor. Two systems have prevailed; one, whereby to the townships is relegated the duty of providing for the poor; and by the other they are placed in charge of county officers, each county determining for itself which course it will follow. There are, however, but few counties which have not abolished the township system. The policy of the State in regard to the care of its poor, has been liberal, by very many thought too liberal. Large county-houses have been constructed, often much larger than necessary, and very frequently not carefully planned or built. The first requisite, safety from fire, has been constantly overlooked; and all idea of separation and classification frequently ignored. There is no record that any inmates have suffered from want of proper clothing, and no just complaint has been made that they have not been well fed. But in their care, two cheap and very essential requisites have been very often entirely overlooked, viz.: fresh air and soap. Except in the poor houses built or remodeled within the last few years, proper bathing facilities and sufficient ventilation are unprovided.

That proper poor-house keepers have not always been provided, the following interview with one of them, which I give at length, omitting names and places, will sufficiently show:

I called last evening, and learned that he was keeper of the county poor-house for six years, beginning in 1847. He seemed to know little about the laws governing the matters of jails and prisons *or even those governing the poor*; but was quite full of his own experiences. He said the children of the poor-house were kept with the women and apart from the men; they were sent regularly to school at the district school-house. The insane were kept in a house by themselves, locked in cells of which there were seven. There were about fifty inmates in the poor-house when he

took it; he found them moping about with nothing to do. He said he went to the superintendent and told him he must have some checkers and cards. The superintendent wanted to know what he wanted with them. He told him none of his business, he wanted to get them, so he got them, took them to the poor-house and gave the paupers something to amuse themselves with, which made them, he said, more contented; he often took a hand at cards with them himself. Able-bodied men worked on the farm. He found when he took the house that his predecessor was in the habit of locking the inmates in their rooms at night; this he did away with. Thinks he was the first man who had paupers vote. The Prosecuting Attorney said the laws would not permit it; but he took them to the polls where the votes were challenged, but he soon put a stop to that, by saying that they were poor paupers deprived of enough without being deprived of voting. He and the inspector of election, however, were indicted by the grand jury for having allowed such a thing; but his attorney soon convinced the Prosecuting Attorney that a man did not lose his residence by being at the poor-house, and the suit was dropped, and he laughed and said: "I got in fourteen votes that way, and we just carried the election by thirteen votes." He used to take his paupers to the county fair, the managers of which objected at first to admitting the "dirty creatures;" but he told the officers they were as clean as they were, and they let him bring them; and he never had any trouble after the first time. He thinks very little of insane asylums, having the utmost confidence in the way he used to treat the insane at the poor-house. He told me of one man whom, by hanging up by the neck for a while, he cured; another man, by knocking him down with a stick of wood two or three times; that, with working them out-doors every day, he considered all-sufficient for the permanent cure of this class.

The State has been frequently been imposed upon by paupers shipped into it from the Eastern States, Canada, and even from countries across the sea. Michigan is not justly chargeable with all the dependents shown by the census to be within her borders, and which she is compelled to support. Large numbers of pauper children especially, have been shipped in from New York and Boston. More careful examinations and prompt measures looking to the return of these foreign paupers by the Superintendents of the Poor, would have lessened the number greatly.

The amount of unnecessary out-door relief furnished by the Supervisors in their individual capacity, has aided to make the State attractive tramping ground for foreign paupers ; and it has been too frequently and vehemently charged, not to be, in some degree, at least, true, that some of these officers have sometimes distributed portions of the public poor funds, not where absolutely needed by the recipient, but where they would do the officer the most good in the next election. It has been claimed, and by a great many people implicitly believed, that a poor-master in Wayne county kept himself continually in office for many years, no matter which party was in the majority, by a skillful manipulation of the poor funds. It was never suspected that he was enabled to retain the position because of the confidence of the people in his integrity.

Since the creation of the office of Superintendents of the Poor, there has been a very great improvement in the management of poor-houses generally ; and, so far as they have had to do with them, in all matters pertaining to the dependent class.

One of the most useful charitable agencies in the State, is the Association of the Superintendents of the Poor, which was inaugurated in December, 1873, at a convention of superintendents, where twenty-three counties were represented, and thirty-nine superintendents were present.

The object of the Association is to confer annually together respecting all matters which may arise in connection with pauperism and its prevention. The Association includes, also, keepers of poor-houses, all officers of State and local charitable institutions, and of penal and reformatory institutions, as well. All questions respecting the attention required by the poor to prevent them from becoming paupers, measures to be taken to prevent imposition upon charitably disposed citizens and public officers, the most economical and benevolent treatment of persons, who, from accident, misfortune or their own fault, become a burden on the public, are carefully studied by the members, and made the subjects of papers read at the annual conventions. These are printed with the discussions which follow, and extensively circulated throughout the State. The discussions at these conventions assume an eminently practical character and generally result in the appointment of a committee to urge upon the next Legislature the adoption of such charitable and penal reform measures as may have been determined upon.

In 1879 such a committee strongly urged that the liquor tax be largely increased, and that the proceeds go to augment the poor fund of the several counties; that an industrial school be provided for girls; that the retention of children in poor-houses be prohibited; that counties be compelled to provide for the working of tramps and other persons of like character, at breaking stone, or some similar occupation. And since then, among other things, they have repeatedly urged upon the Legislature, but so far in vain, the establishment of an institution for training feeble-minded children.

The first of the State correctional institutions, the State Prison, was located at Jackson, or Jacksonburg, as it was then called, in 1838. The agent of the prison was authorized in 1842 to employ convicts at mechanical labor, giving twenty days' notice, and letting them to the highest bidders, in the branches of trade which it might be found desirable to carry on; the avails to go towards defraying the expenses of the prison.

The first law relative to the government of the State Prison, was passed in 1839, and, with a few exceptions, the general principles of its management have remained the same ever since. Solitary confinement for life was the sentence generally passed upon murderers, but as it was demonstrated that continual solitary confinement in a cell produced insanity or imbecility, in 1849 a law was passed authorizing the inspectors to release such from the cells and work them as other convicts. Since that time, solitary confinement has only been resorted to for a few days at a time, as an extra punishment for offences committed in the prison.

The striped dress of the convicts has been changed, corporal punishment prohibited, though it is sometimes inflicted; and recently the lock-step has been abandoned, and schools are maintained. The convicts are well fed and comfortably clothed. An important clause of the law which provides that the warden shall furnish employment to prisoners best suited to their capacities, has always remained a dead letter.

Article XVIII, of Section 3, of the State Constitution, provides that no mechanical trade shall hereafter be taught convicts, except the manufacture of such articles as are chiefly imported from other States or countries. And as Michigan manufactures almost everything she uses, which it is possible to manufacture with any profit, this unfortunate clause, so far as enforced, forms the great-

est possible hindrance to the reformation of criminals; for to compel them to learn a good trade is universally recognized as one of the first steps toward reformation. With a good trade, even, and all the advantages and facilities that can be provided, and with a strong will, too, it is exceedingly difficult for any man who has once passed through the dark valley of the shadow of prison walls to become an upright and self-supporting citizen. The self-protection of society demands that every possible exertion shall be made, during the incarceration of a criminal, to put him in such a condition that upon his exit it shall have no further trouble with him; and when society prevents, by a provision of its fundamental law, those who have charge of a criminal from teaching him a trade which prepares him to take care of himself and family, it commits a blunder. When it prevents the individual under its charge from acquiring the ability to live upon an equality with his fellow-men it commits a crime against the criminal himself.

The original law of 1839 provided for the appointment of the agent or warden by the Board, to hold during its pleasure; and with its assent, the warden appointed the under-officers, thus being responsible for the general management of the prison. A very unfortunate law was passed in 1840, giving the appointment of the warden to the Governor. Each Governor appoints a warden from among his political henchmen. If there is to be any reformation of criminals, it is too plain a proposition to need argument, that the warden should hold his office during efficiency and good behavior.

The total number of prisoners received to June 1st, 1886, was 3,844; and the number in prison on that day was 785; fifty-one of whom are life-convicts. The plant has cost the State about \$686,000.

The State House of Correction and Reformatory, at Ionia, was established in 1877. It was originally designed for male convicts sentenced for ninety days or longer, who were between sixteen and twenty-five years of age, excepting those sentenced for life.

Though called a reformatory, there are no reformatory features connected with it, different from those existing at the State Prison; and even the distinction of age has, in very many cases, not been adhered to. Many judges have become accustomed to send short-time men to this prison, regardless of age, the character of the

offense or the number of times the convict has before served sentence. There is no systematic classification of prisoners, except perhaps during the few hours weekly when they are in the school.

The cost of the plant is, in round numbers, \$365,000 ; 8,153 inmates have been received, with an average time served by each of seven months and a half. The number of prisoners June 1st last, was 432.

In 1885 a bill was passed for the selection of a site for, and the erection of, a "Branch of the State Prison in the Upper Peninsula," and an appropriation of \$150,000 was made for that purpose. A site has been selected near Marquette, and plans for a prison adopted.

The Detroit House of Correction, though not a State institution, from the number and variety in character of its inmates, and its many peculiarities of organization and arrangement, ought not to be passed by without mention. It is in charge of four inspectors nominated by the Mayor of Detroit and confirmed by the Common Council, one retiring from office each year. It is subject to State inspection. The superintendent is appointed by the board for a term of years, and subordinates are appointed by the board on his nomination. This makes him the one responsible head of the institution, both for its financial management and discipline. It has been conducted on the State account plan, materials being bought, worked up, and the articles manufactured, sold. The superintendents have generally held through several terms, and the discipline and management have always been considered excellent.

An examination of the law of its organization, shows this prison to be rather

Conglomerate in character.

It is the female prison of the State.

It has been, and is, *in potentia*, a female reformatory.

It is a State Prison, except for murderers.

It is a United States Prison, or a prison for the confinement of United States prisoners, and it is a city work-house, and a work-house for any county contracting with it.

In view of the lack of any adequate prison system, and to solve some of the difficulties caused by loose legislation, and to enable the State to enter upon a course of reform in prison methods, in accordance with movements the world over, a bill was drafted

and placed before the last Legislature, known as the joint-prison bill. It attracted much attention, and its objects and provisions received universal approbation among penologists and others interested in reformatory matters. It provided for the consolidation of the two State penal institutions under one non-partisan board of control, the members to hold office for six years, two retiring biennially. The Board was to have the appointment of the wardens who should hold for a term of four years, unless within that time removed for cause. It provided for indefinite sentences in certain cases, at the discretion of the judge trying the case; for the ticket-of-leave system; for conveyance of convicts to prison by a prison-officer; for the employment of prisoners and the disposition of the proceeds of such employment, and especially for the employment of young prisoners upon such work as would fit them for self-support upon release. The bill passed both houses, but unfortunately the Governor vetoed it. It is sincerely hoped that a similar, but improved, measure embracing all the prisons, and not mixed up with the prison labor question, will be passed at the next session.

One of the great difficulties in the treatment of crime, is the uncertainty of conviction and the inequality and unjustness of punishments. Juries will not do their duty in the matter of conviction, and frequently judges are not above criticism in regard to sentences, making no discrimination against recidivists, or in favor of first-term men. With the indefinite sentence, however, as the law, the jury has only to find whether the accused committed the offense, a long sentence not staring them in the face, for the law fixes the limits of imprisonment, and the prison authorities determine from all the facts of his previous life and the subsequent conduct of the prisoner, when, within those limits, it is safe for society and just to him that he shall be permitted again at large. Its adoption would be simply an extension of the same system which now prevails with so much profit to the State in connection with our juvenile reformatories.

There can be no legal objection applicable to men and women who violate the law, which would not apply to those of tender years. Indeed the system of allowing a prisoner for "good time" earned in prison, is such a modification of the fixed-sentence system, and has worked so admirably, that it leads logically and necessarily to the adoption of indefinite sentence with its accompaniment, the ticket-of-leave, as a modification and restraint.

DEAF AND DUMB SCHOOL.

As the second State institution coming within the purview of this paper, and the first charitable institution organized in the State, comes the Deaf and Dumb School. The first board was appointed by an act of the Legislature of 1848, to organize an Asylum for the Deaf and Dumb and Blind, and an Asylum the Insane. They made their first report in 1850, selecting a site for an asylum at Flint for the Deaf and Dumb and Blind \$3,000 and ten acres of land having been donated by the village. The school was opened in February, 1854, and twelve pupils were received during the first school year. The first building was completed in 1856, at a cost of \$30,500, and occupied that year by forty-seven pupils and four teachers. In that year, also, a separate board was provided for the Insane Asylum which had been located at Kalamazoo.

The Board of the Deaf and Dumb School consists of three members, who hold office for six years, one retiring at the end of each two years. Board and tuition are free to all students resident in the State.

Those who have intimate acquaintance with the deaf and dumb and the blind, have never thought it wise to provide for them in the same establishment, as the methods of education and care have nothing in common. The combination of the two schools, however, continued till June, 1880, when the blind were provided for in a separate school at Lansing. There have been admitted to the Deaf and Dumb School 1,066 pupils, including 173 blind, before the separation. During the thirty-two years of the institution, the number of pupils has more than kept pace with the growth of the population of the State. That deaf mutes can be educated and made to think and act like other people, becomes every year better known, and every year brings to the institution an increased percentage of those designed to be benefitted by it. Over four hundred thousand dollars have been invested in the school; its annual expenses are about \$50,000, and the present attendance of pupils is about three hundred. In standing, it ranks among the first of like institutions in the country; and in numbers, there are only five in the United States that exceed it. The institution aims to be eminently practical in the character of its education, hence it assumes to a great degree, the appear-

ance of a manual training school. Quite a large number of trades are taught, among others, printing, cabinet-making, carpentering, farming and drafting. Its pupils can be found in every part of the country following profitable pursuits and leading the lives of intelligent and useful citizens.

BLIND SCHOOL.

In 1879, the act was passed for the establishment of a separate school for the blind; and the Governor and three commissioners were authorized to select a site, erect buildings, and in the meantime put the school in operation. A permanent board of control was provided for, organized upon the same plan as the Board of the Deaf and Dumb School. The institution is for the instruction of blind children of the State between ten and twenty-one years of age; but the Board may admit those older or younger. Applicants from other States are received on payment of ten per cent. over the actual *per capita* running expenses of the school. Pupils are entitled to remain eight years, and even ten, by permission of the Board. Superintendents of the poor are required to send persons entitled to admission who are in charge of the county, and clothe them while there. Board and tuition are free to others not dependent on the county. In 1880 the commissioners rented the Odd Fellows' Institute at Lansing, and the school opened with thirty-five pupils. This property was subsequently purchased for \$10,000, and the main buildings greatly enlarged, by wings on each side, costing about \$37,000 each.

The total number of pupils in 1881 was 55; 1882, 63; 1883, 70; and the same number in 1884; and the cost per annum *per capita* is something over \$300; but I doubt whether those connected with the school begrudge the State's having been thus bountiful in her efforts to provide for the education of the blind.

DEAF, DUMB AND BLIND.

Consistency, however, demands that others more unfortunate should receive some share of her attention. There is no provision for the deaf, dumb and blind. There are quite a number of these unfortunates in our county-houses and throughout the State. One of the sweetest faces I ever saw was that of a little girl four years old, deaf, dumb and blind, in one of our county poor-houses. There is sometimes a sunshine more radiant than that which

beams upon us from the heavens. The soul of this little child pouring itself forth in a glad smile, as some little attention is paid her, sends more warmth to a sympathising heart than the gladdening rays of a vernal sun. And she is beautiful. Great "ox-eyed eyes," such as Homer sang of Juno, though they see not; a complexion that would tempt a Fortuny, so transparent and delicately tinged was it, and such a mild and gentle soul sadly feeling its way out to light! That little life, for want of attention, must sink into idiocy worse than death. And such as she, because they are few and have none to plead their cause, have been passed by unheeded in the munificent distribution of the bounty of the State.

FEEBLE-MINDED.

Several Governors in their messages, have called the attention of the Legislature to another class, which probably now number two hundred or more, for which no State provision has been made. In their annual conventions, for many years, the Superintendents of the Poor have urged the Legislature to take some action looking to the relief of this class; and the State Board of Corrections and Charities has reported what was doing in our sister States, setting forth the necessity, the injury done, and the dangers incurred by leaving them in the poor-houses untrained, unguarded and unprotected; but, as yet, the Legislature has ever been too intent on other things to listen to any argument or appeal for an institution to train and have the custody of the feeble-minded. It is not merely that the welfare of this unfortunate class demands this much of us. The welfare of society and practical economy recommends it as well. The older States, and younger, too, for that matter, have institutions of the kind; and their experiences all show beyond a question, that not only much good can be done, that many of this class can be made self-supporting, or nearly so; but that they are much more economically and certainly more humanely cared for under the direction of one skilled in the business, than in poor-houses where they are continually the butts of ridicule, picked upon, harassed, made ugly, dangerous, and frequently outraged in a manner not to be named. The Christian County of Wayne has furnished two horrible instances of such outrages within the last few years. The Board of Charities comes upon these sad specimens of humanity occasionally in a condition

and under treatment that makes the heart sick. At a county poor-house not long since a girl fourteen years old was kept, in a first floor room with slats across the window, perfectly naked. Men were constantly passing and could not help seeing her. A brother was kept in a pen with no protection from the glaring sun of a mid-summer's day. With proper training and treatment both might be made quite useful.

Gov. Bagley, probably as wise and liberal a Governor in matters of charity and correction as Michigan has ever had, in his message in 1873, said: "I hold to the firm belief that all idiotic persons are the wards of the State, and that it should exercise for them and over them the same loving care, as far as possible, that a wise parent should over his children. The State should do for them what humanity demands." Again, he says: "Provision should be made for these babes of God. I most sincerely hope it may not be long before we will be enabled to empty every poor-house of its idiotic inmates. Every consideration of humanity and charity urges on the work."

INSANE ASYLUMS.

Though provision was made for an insane asylum contemporaneously with the School for the Deaf and Dumb and the Blind, the first asylum at Kalamazoo was not opened till 1859. Before that time, the insane were confined in county-houses, jails, strong rooms, attics, log-pens and holes dug in the ground; or they wandered uncontrolled, a terror to children and a life-long horror to women upon whom they cast an evil eye. No family was safe from a visit from them by day or by night. Women half naked, followed by crowds of school children, and sometimes by men, made the streets hideous with their profanity and vulgarity.

In 1860 it was found that there were seven hundred insane persons who needed asylum treatment; and at that time, the asylum could care for only one hundred. The war prevented making proper provision then, and it was not until 1870 that the building was enlarged to care for three hundred. In 1873 the great deficiency was so apparent that another asylum was provided for at Pontiac, known as the Eastern Asylum, which, however, was not completed and opened until 1878. During the first year it cared for over four hundred patients. When provision was made for this asylum, it was expected that it would be suffi-

cient for years to come ; but by the time the Pontiac Asylum was opened, it was manifest that the State would need at least another as large. In 1880 a third asylum was provided for at Traverse City, to accommodate five hundred patients; and in 1885 it was opened.

In 1883 an asylum for insane criminals was provided for, or partly provided for, which, for want of sufficient foresight on the part of the Legislature, and lack of sufficient appropriation, was necessarily located adjoining the State House of Correction at Ionia, and the south yard wall was utilized for a portion of the north wall of the building. It was opened for patients in 1885.

The present capacity of the Michigan asylums is as follows: Michigan Asylum, at Kalamazoo, 800 ; Eastern Michigan Asylum, at Pontiac, 700 ; Northern Asylum, at Traverse City, 500 ; Asylum for Insane Criminals, at Ionia ; 100. Total, 2,100.

The law governing asylums has not been changed in any important particular since first enacted in 1859. Whatever changes have been made, have been in the direction of securing more perfect safeguards to the liberty of the individual, and a more careful determination of the question of insanity prior to transfer to an institution. To this end the question of insanity of all patients has been made by law a judicial matter, it being necessary now that the Judge of Probate shall review and approve all certificates of insanity of private patients.

In 1878 a law was passed which provided that when any patient had been in an asylum for two years at the expense of a county, it should become a State patient, and henceforth provided for at the expense of the State. One result of this law has been to render the counties less careful to protect the public from imposition. Quite a number of cases have been found, where the county officers undoubtedly received from a well-to-do relative the amount paid or to be paid by the county for the two years' expenses as county patients, for the purpose and with the intent of saddling the patient upon the State and relieving the relative of the future expense.

In this matter, Michigan has done nobly. Her asylums rank with any in the United States. The rich, the poor, the recently attacked and the chronic patient are now alike all well taken care of. No pains or necessary expense has been spared ; and yet money has not been wasted. But the self-respecting principle has

been adhered to, that if a patient or his friends were able to pay the cost of his treatment, they should do so ; if they were unable, and the county was compelled to, the patient was entitled to and has enjoyed the same treatment and attention as his wealthy neighbor. All the asylums have been free from political interference. The boards of control have been non-partisan, and the members appointed, with one or two exceptions, solely in consequence of their fitness to assume the control of large business enterprises, or their special knowledge of insanity. The boards have all served gratuitously. They have given the State the benefit of a large business experience, a valuable judgment and disinterested service, which no salary could adequately reward. The superintendents are appointed by the respective boards. Those of the three large asylums are examples of the working of the civil service reform in this State. They all previously served as assistants in Michigan asylums, and were promoted because none better could be found to occupy the positions which they now so ably fill.

Homeopathic and allopathic schools are both represented among the superintendents ; but, in fact, that question had probably very little, if anything, to do with their selection.

In no case, I believe, has any officer been appointed by the boards with the slightest reference to political views ; and no changes have been made in consequence of changes of political parties. No suspicion of patronage or jobbery has ever attached to the erection of any building, or the purchase of any supplies. The State has received full value for every dollar she has paid out through the hands of the insane asylum officers. A permanency and a steady improvement have thus characterized all the operations of the asylums, and a stability has been given to their management, which is noteworthy when compared with the frequent changes of policy and administration of asylums in adjoining States.

The character of the buildings is in marked contrast with the extravagance displayed in New York and Massachusetts, and with the low grade and cheap structures of Canada and the southern and western States. They are all substantially built, and furnished with the most approved hygienic appliances. The rooms are large and airy, corridors neat and cheerful, and the architectural arrangements pleasing. Heating and ventilation have received

careful study, and are of the most approved systems. The administration buildings are not extravagant; the kitchen and laundry departments seem to be unusually complete and well ordered, and the construction has been of such a character that additions to any department can be made without inconvenience, and at a much reduced *per capita* cost.

The beneficial effect of this generous provision for the insane, upon humanitarian work generally throughout the State, cannot be overestimated. The standard of care inaugurated, the character of the buildings constructed, and the general interest which these institutions have awakened for one class of unfortunates, have had a great influence upon all other State charitable institutions.

The enlightened public sentiment of Michigan, not only in reference to the insane, but also in regard to the care of all other dependent and afflicted classes, is to be ascribed in a great measure to the far-sighted sagacity and broad humanity of the original promoters of our first asylum. They deserve great credit for establishing and constructing an institution, which, at the time of its erection, was much in advance of the age. The spectacle of a poor pioneer State providing for its insane after the most perfect methods then attainable, is worthy of highest commendation. No less praise should be given to the first medical superintendent whose broad-minded and long continued administration developed a healthy public sentiment throughout the State and gave practical form to the dictates of an enlightened humanity.

Year by year the standard of care has improved, and to-day the methods of treatment in Michigan are equal to those in any other State, and far better than in most of the States of the Union. Our asylums are practically non-restraint institutions. By careful management, a healthy sentiment has been developed within them, which has led to the abolition of mechanical restraint. For days and weeks together, not a single patient will be found in restraint. It is only used in surgical cases, and where constant attention cannot prevent suicide or self-mutilation. Larger liberty is given the patients; many are allowed to come and go upon parole, others occupy rooms in open door halls, and are permitted the liberty of the grounds, and as they show signs of recovery are permitted to go away on trial; and every effort is made to diminish the restrictions incident to asylum life. A large amount of

liberty is given patients not allowed to go on parole or in open door halls, by daily open-air exercise, not in airing courts, but upon the farm and in the groves surrounding the asylum. Supplementary to non-restraint, and as an important factor of asylum treatment, industrial pursuits are encouraged in every way possible. Male patients are systematically employed in all sorts of work, in the care of cattle, shoveling coal, cutting wood, wheeling earth, making mattresses, seating chairs, binding books, printing, etc., etc. The women are employed in knitting, sewing, manufacture of all sorts of clothing, laundry, kitchen, growing flowers. Amusements are by no means neglected; social gatherings, cards, concerts, lectures, dances, reading, choir practice, croquet, lawn-tennis, base ball, and other games are regularly enjoyed by the patients.

By an act of 1877 the boards of the several asylums are required to meet twice a year in joint session, to consider matters of common interest and devise methods for the benefit of the insane of the State. The frequent interchange of views among the members of the boards, serves to keep the asylums in harmonious relations, and yet there has been a warm emulation in devising ways and means of adding to the efficiency of each asylum. At these joint meetings the superintendents have taken an active part, preparing and reading papers on the various means employed by each in dealing with difficulties, and suggesting changes and improvement.

STATE REFORM SCHOOL.

The Reform School, located at Lansing, seems to have first come before the public in an official way through the valedictory message of Gov. Parsons in 1855. Gov. Bingham, in his inaugural message the same year, also urged the establishment of a House of Refuge for boys, that they might be separated from the hardened offenders in jails and prisons. The Legislature that year provided for such an establishment to be located at Lansing, upon condition that not less than twenty acres should be donated for that purpose. Thirty acres were given, and subsequently the State purchased one hundred and ninety-five acres more. The institution was opened September 2, 1856. The name was changed in 1859 to the State Reform School. Originally the management was vested in a board of six commissioners, two appointed by the Governor and confirmed by the Senate every two years. In 1857,

however, a change was made to a board of control of three members. At first the institution consisted of one main building with bars, locks, grated doors and high fences. These latter have all now been removed, and additions to the buildings have been made by cottages accommodating fifty boys each. Each cottage is presided over by a man and his wife, who act in the capacity of teachers and have general charge. The instruction is confined to the common English branches. A chapel has been erected upon the grounds, which is used not only for religious services, but for such other general purposes of assembly as may be found profitable. Sunday school is conducted in the morning. It is a very good feature of the management, that frequently half the boys of the school attend service in the different churches of the town, under charge of one of their own number.

The law provides that the board of control may, in its judgment, place in families, or indenture as apprentices, any boys sufficiently reformed, or return them to their parents, requiring, if they deem it necessary, security for their care and future good behavior. The limit of age for sending boys to the school, is from ten to sixteen, and all boys, except for truancy, are sent until eighteen years of age, unless sooner discharged by the board. The boys rise at 5:30 in the morning in the summer, and at six in the winter, and retire at eight o'clock. Each boy, unless ill, is required to work four to five hours each day, attend school four to five hours, and about three hours are devoted to recreation. A large play-ground is provided, and balls, bats, marbles and other things for their amusement, so that a boy finds the life which he leads at the school fully as pleasant and made more profitable than his previous condition as a young marauder and vagrant. A boy, who, by uniform good conduct, gives evidence of reformation, generally is, and always ought to be discharged before he attains his eighteenth year, if he has a good home, or one can be found for him, by a county agent.

Incorrigible boys, upon whom reformatory influences have failed, and whose presence at the school is deemed prejudicial to its discipline, are returned to the court issuing the commitment, for such disposition as it shall deem proper. If the school were not so large, more personal attention could be given to each individual under its care, and greater success might naturally be expected; but it is too much to expect that any superintendent

can have a personal knowledge or charge of 500 boys and accomplish the same results as with half the number. There is some variety in the occupations which a boy can choose from, as his tastes incline him; but the opportunity for choice might be enlarged with profit. Many a boy is totally unfit to be a farmer, tailor, shoemaker, baker or engineer. His nervous organization and inclinations are such that he cannot be kept and cannot keep himself to any of these avocations. He will be a total failure if confined to any one of them, while he might make a good printer, a skillful draughtsman, or a rapid and accurate stenographer or telegrapher. Not that one of these trades is above another; but, simply, that the individual is fitted for one, and it is to his taste, and not so another.

STATE PUBLIC SCHOOL.

The State Public School for dependent and neglected children is the natural outgrowth of the civilization in which we live, and of the charitable and economical studies and the theories of the philanthropists of the last twenty-five years.

In the same line, it is a long step beyond the poor-house, the reform school and the prison. It is the ounce of prevention which renders unnecessary the pound of cure, which does not always cure. The great wonder is, that Michigan alone, of all the States, has such a school. The practical public men of the State, without foreseeing, perhaps, what would result, did certainly foresee the necessity for a full and careful examination of the institutions of the State having any connection with the suppression of pauperism and crime. The first official action in this direction appears to have been taken by Gov. Baldwin. Before assuming the duties of his office, he visited several State institutions, jails and poor-houses, and plainly saw, not only the necessity for improvements, but for radical changes. This led him, in his inaugural message, to recommend the appointment of a commission to make a more careful examination of these matters than his time and opportunities would afford him. In accordance therewith, by joint resolution, he was authorized to appoint such a commission. He appointed one, and after a very careful and extensive examination, it made an able and exhaustive report to the Legislature of 1871, among other things, calling special attention to the lamentable condition of dependent children in and out of poor-houses, and asking the

Legislature to take some action for their relief. The commission recommended that the State assume control of its dependent children, provide for and educate them, and among other things, for that purpose recommended the establishment of a State Primary School. The facts and arguments which they set forth were the moving cause of an act passed at that session, to carry out their recommendation.

It provided for three commissioners to be appointed by the Governor, to select a site and erect a building. Thirty thousand dollars were appropriated for the purpose, and the commissioners were given charge of the school after its completion until the end of the next succeeding session of the Legislature. The school was located at Coldwater, the citizens of that place donating the site and \$25,000 for the purpose. Further appropriations were made in 1873, and the buildings were completed in 1874. By the Legislature of 1875 its capacity was increased to accommodate 250 children. It was organized upon the congregate and cottage plan combined; a large main building, with wings, providing a residence for the Superintendent, offices, dormitories for teachers, and school-rooms, and a chapel, and dining-room, kitchen, etc., in a rear projection. In the rear of this building, and extending both sides of it, are ten cottages, entirely disconnected, accommodating about thirty children each, and each under the charge of a matron.

There is nothing about the institution which would recall the squalor and untidiness, or the listless vagrant life of poor-house children. In dress, behavior and general appearance, these little ones compare well with district school children throughout the State. Children over two and under twelve years of age, sound in body and mind, are sent by superintendents of the poor upon the order of the judge of probate. The act provided for teaching the branches usually taught in common schools, and for proper moral and physical training, and declared the object to be, to provide such children only a temporary home, until one could be procured for them in a good family; and the act made it the duty of the board, so far as possible, to procure homes for all such pupils as had received a primary education.

No more beneficent measure has been enacted by the Legislature of any State. No measure has had a greater tendency to cut off the tap-root of crime and pauperism, not because of its

enactment simply, but because it has been properly carried out. No feature of it has been a dead letter. The records of the school show the work honestly and faithfully pursued from the day of its commencement, and the number of children cared for and placed in homes, shows the accomplishment of a work second to none other in the State. The share in this noble work taken by the county agents of the State Board of Corrections and Charities, not only in providing homes for children directly, without sending them to the State Public School, but also in securing homes for the children from the school, and continually watching over the care and treatment of the little ones that they should suffer no harm from neglect or cruelty, has been such an important element of success in this great charity, that it should ever be in mind when the subject is mentioned. In fact, a great share of this success is owing to the hearty co-operation of the officers of the school and the county agents. The agents have the advantage of personally and continually knowing the families in which the children are placed, and all their surroundings. The first rumor of neglect or ill-treatment is wafted to their ears, and they find a ready way to investigate all charges, and effect reconciliations, where proper, between the children and families with whom they are. Two thousand children have been received at the school; over fourteen hundred placed in homes, and the plant has cost the State about \$150,000. The school is neither penal nor reformatory, and no more taint attaches to any child because of its having passed through it, than through any other State institution, such as the Normal School, the Agricultural College or the University. They are all established for the purpose of aiding those who resort to them to become good and well-educated citizens; and it is not expected that any one who resorts to anyone of them will return an equivalent for what he receives.

GIRLS' INDUSTRIAL HOME.

In 1879 the Legislature passed an act establishing a reform school for girls, and appropriating \$30,000 for purchasing grounds, erecting suitable buildings, and to pay current expenses. It provided for a board of control of four women, subsequently changed to three, and two men, to be appointed in the usual manner, authorized to select a site containing not less than twenty-five acres, adopt a plan, erect buildings for the confinement and

discipline of girls between the ages of seven and seventeen until twenty-one years of age, except truants are sent until sixteen. It provided that the school should be conducted on the family or cottage plan; and that the girls should be taught domestic industries and given a thorough education in all branches of household work. Sentences by police or justice court were required to be approved by the Circuit or Probate Court of the county, and the approval endorsed on the commitment. The Board was authorized to liberate girls reformed, or indenture them to suitable persons, and authority was granted to return any incorrigible girls to the court, for other sentence. The institution was opened August 1st, 1881; eighty-five girls were received during the first fiscal year; and the year following, one hundred and forty-three had been received. Up to June 1st of this year, three hundred and four girls have been received; fifty-three placed out on ticket-of-leave; twelve returned as unfit subjects; thirty-four discharged for various reasons, of whom twenty-two were for good behavior, and four have died; leaving one hundred and seventy-nine in the Home. There are five grades, and the girls are graded in the several cottages according to their condition, and the improvement which they make. In 1883 the name of the institution was changed to the State Industrial Home for Girls, and an appropriation of \$65,000 was made for current expenses for two years, and \$13,000 to purchase an additional forty acres and for other purposes; \$23,000 was appropriated for another cottage, which the Legislature unfortunately provided should be double the capacity of those previously built.

Thirty girls, such as are usually sent to an institution of this nature, are all that any matron can properly care for. Unfortunately, too, the cottage was located between others, and sufficient room for the spread of the wings was lacking, so that it was forced to assume the shape of a V. The proximity of this central cottage to the others adjacent renders it easy, and a matter of daily occurrence, for the inmates to communicate with those in the adjoining buildings.

The aim of the institution is, to make domestic women, prudent of speech and conduct, cleanly, industrious and capable, so that they may become eventually good wives and good mothers. To treat them as criminals any more than is absolutely necessary to restrain them, would be to commit an egregious error. Many of

them have never known what it was to have a clean abiding-place, or to hear clean language; and the improvement of the girls in manners, conduct and appearance after they have been in this institution a short time is generally to be seen at a glance. It is not expected that all girls sent to such an institution will be saved (whatever that may mean); and it ought not to be expected that an institution such as this will at once attain perfection in all its methods; but, so far, such a large proportion of the girls who have been released, or placed in homes, have shown themselves so worthy of the trust placed in them, that the Board and officers have every reason to congratulate themselves upon the success of their efforts, and the people of the State to be thankful that so important an institution is in worthy hands.

It is true, however, that there are some girls in the Home, and there have been since the opening, who have no business in such a public institution. They are the unfortunate victims of unkind relatives or others who seek to be rid of them, and use a justice of the peace as the unworthy means of accomplishing their purpose. Some of the o'ertrue tales which are told by these girls of their treatment before arrest, and the farcical trial gone through with to convict them, would bring a blush upon the face of fair justice, if she were aware, how, in her name, such proceedings were conducted.

THE STATE BOARD OF CORRECTIONS AND CHARITIES.

The State Board of Corrections and Charities was first organized in 1871, under the name of the Board of State Commissioners for the general supervision of charitable, penal, pauper and reformatory institutions. It is the continuation of Gov. Baldwin's Commission to examine the penal and charitable institutions of the State. It was made, among other things, the duty of the Board at least once a year to visit and thoroughly examine the prisons, asylums and reformatories of the State, and the jails and poor-houses of the several counties. As a board, it has never had any executive power or authority. It was not created to manage, but to advise and supervise. It has never had any power or desire to control the management of any State or county institution, but through investigations, comparisons and suggestions, to effect more uniform, economical and improved methods for the treatment of those, who through crime, poverty or misfortune, have become partly or wholly,

a public charge, or are likely to. Perhaps the most important of its duties relates to inspection. Thorough, careful and frequent inspection, by disinterested persons of common sense, always serves to reveal sufficient facts to prevent abuses in public institutions. When the door closes upon the inmates of any public establishment and they are secluded from the public view they are liable to suffer neglect or abuse from the almost absolute power possessed by the officials. Visits when unexpected, and careful oversight, not only tend to prevent abuses, but inspire public confidence in their non-existence. This oversight tends to relieve the officials from suspicions, and frequently materially aids them in making changes and reforms which without advice, aid and support, they would be made unable to effect. Frequently preconceived opinions of other officials, newly elected, inexperienced, knowing nothing of the matter in question, are to be overcome; there are personal interests to be set aside; demagoguery to be withstood, and political wire-pulling to be exposed. Though these things are not specially nominated in the act creating the Board or defining its duties, they frequently are to be met, and to meet them is generally sufficient to overcome them; except in the Legislature and sometimes with the judiciary. They, being each in these things, as it were, a law unto themselves, sometimes conduct matters as they please, regardless of argument or law. This is only exceptionally the case. Generally, judges whose attention has been called to abuses or desirable reforms, have heartily co-operated; and the same may be said of legislators when they have devoted the time necessary to a full understanding of a subject presented to them. The Board is one rather of measures than of matters, of theories that have been proved practical, rather than of practices that have only precedents for their basis, regardless of changes that render them useless or obstructive. Every pathmaster knows that frequent alteration is necessary to keep the highways free from ruts; and it is no less true of the ways which lead from the people to institutions; through institutions and back again to the people. It is necessary to keep them traversable that they should be frequently inspected, and obstacles and ruts, when found, removed.

The Board acts also as a means of communicating information between institutions of different character,—recommending what it finds new and good and healthful; and advising how to avoid what has been found elsewhere objectionable. For example, in

building, to avoid courts and places unexposed to the sun, as breeding disease; proximity of cottages, as interfering with discipline; elaborate designs as a waste of the people's money; an extension of the plan of placing children, not too bad, in families, as a good family under ordinary circumstances is the best home and reformatory that can be provided for our dependent and delinquent youth; bath-rooms and work-yards in connection with jails, as cleanliness and industry are the two things which a tramp or vagrant hates worse than the devil hates holy water. Sometimes amusing incidents occur in connection with the inspection of county buildings. The visitor is detained until those who are half clad, without shoes or uncombed, are put in order; but any little attempt of this description at deception, is at once perceived, and generally casually noticed in a pleasant manner that prevents its repetition. If a house is dirty, it cannot be cleaned in a few moments. If the inmates are squalid, unkempt or ill-fed, their appearance will indicate these facts to a connoisseur at once, and unequivocally; and, on the other hand, if general order prevails, and cleanliness and industry are the rule, they will show, and any little irregularity is excused, for accidents will happen everywhere, and are more likely to, in the handling of people of irregular habits and undisciplined lives, than elsewhere.

In the inspection of State institutions there has very seldom been occasion to complain of the care and treatment of inmates, or of lack of cleanliness. They may generally be said to be models of neatness which many a housewife would do well to copy. They are not all, however, well ventilated or provided with proper bathing facilities. This is more especially true of prisons.

The law provides that the members of the Board shall receive no compensation for their time or services. No member can be interested in any contract with respect to any State institution, poor-house or jail; nor, so far as I am able to learn, are there any emoluments or perquisites, except those Addison mentions, when he says, "to an honest mind the best perquisites of a place are the advantages it gives a man of doing good." Of these, there are many; and with these the Board is content. The actual traveling and official expenses of the members—when audited by the Governor, or the State Board of Auditors—are paid. The Board is required by the 1st of October, prior to the sitting of the Legislature, to make a written report to the Governor of the result

of their investigations, together with such information and recommendations as they may deem proper, including their opinions as to the necessity of further legislation to improve the condition and extend the usefulness of the various State, county and other institutions visited. When any special investigations into alleged abuses in any institution are thought necessary, or of any charitable or penal institution outside the State, the Governor is authorized to direct the Board, or one of its members, to examine into the matter, and report.

The Governor is *ex-officio* a member of the Board. It is provided by Act 206, Laws of 1881, that the boards of State charitable, penal and reformatory institutions, before determining amounts to be recommended for appropriation by the Legislature, needed for the ordinary current expenses for the next two years, and for special purposes, shall submit them to the Board of Corrections and Charities for its opinion thereon; and the Board is required to examine, and report to such boards respectively; also, that when any institution shall determine upon the plan of any building for school purposes, living, work or sleeping-rooms for inmates, or any system of ventilation, heating or sewerage, authorized by the Legislature to be constructed, such plan shall be submitted to the Board for examination and its opinion thereon, and that the next report of the institutional board shall show to what extent such opinions were concurred in.

COUNTY AGENTS.

In 1873 it became evident from authentic reports made to the Governor, that there were nearly or quite one thousand children in the institutions controlled by the State, or some department, held as objects of public charity, or offenders under restraint; and that the number was increasing. It was also ascertained that some children were committed to the Reform School or to places of punishment, for trivial causes without much investigation; and more to be rid of them than for any criminal conduct on the part of the children. This state of facts, together with a purpose to secure if possible combined and systematic efforts to put children out into reputable families, and to maintain over them during tender years a supervision that should protect them from abuse, led the Legislature in that year to establish a State agency for the care of juvenile offenders, and authorized the Governor to appoint

each county an agent of the Board of Charities to hold office at the pleasure of the Governor, which precedent has been construed to mean during efficiency and good behavior. Notice of such appointment is given to the County Clerk, and to all judges and justices of the peace. No compensation was at first provided for agents, their actual expenses only being repaid. By subsequent enactment, they are paid three dollars for each case, but not to exceed one hundred dollars for expenses and services in each county, excepting Wayne and Kent, where two hundred dollars may be expended.

When complaint is made against any child under sixteen, for any offense not punishable with imprisonment for life, the court or magistrate having jurisdiction, before proceeding to hear the case, is required to give notice in writing to the county agent, and allow him opportunity to investigate the charge. It is made the agent's duty immediately to make a full examination of the parentage and surroundings of the child, with all the facts and circumstances of the case, and report to the court, whom then the law requires to counsel and advise with him respecting what course the interests of the child and the public demand with respect to its disposition. Thereupon, if a proper case, the court may, with the advice and approval of the Judge of Probate, authorize the agent to bind out the child to some suitable person, or should it appear willful and unmanageable, cause it to be sent to one of the Reform Schools, or House of Correction, subject to such condition of sex and age as the law provides.

It is also made the duty of the agent to visit, at least yearly, all children indentured or placed in charge of any person by the board of any State institution, inquire into the management, condition and treatment of such children, and for that purpose, have private interviews with them, and report to the State Board of Charities and to the institution indenturing them. And should it at any time come to the ears of an agent that any such child is abused or neglected, or that the person is unfit to have the management of such child, he must report the fact to the institution, whereupon the contract is cancelled and the child returned, or indentured to some other person. Before any children can be indentured, adopted or taken from any institution, a report from the agent respecting the suitability of the place must be made, and the law required all applications for release or discharge of

such adopted or indentured children to be given to the agent for his report. It is made the especial duty of such agents to seek suitable persons who are willing to adopt children arrested, or committed to any State institution, or who have been abandoned or neglected. It is the duty of the superintendent of any reform school forthwith to notify the agent of the county upon the discharge of any child, and the agent, so far as possible, assists in procuring him employment and a home free from immoral influences. The agent is also required to keep a careful history of each case. By the law of 1885 the report of the agent to the court is required to be attached to the mittimus when any child is sent to a reformatory, and the agents are required to make special reports of their doings to the superintendents of State institutions when requested by their superintendents, and to the State Board of Charities.

In 1885, also, the county agents together with the superintendents of the poor and the Judge of Probate, were made a local board of jail inspectors, to report twice a year to the Circuit Court and the Board of Charities, the condition of the jail and lockups in each county. The spring inspection was very generally conscientiously performed, sharp criticism of the condition of very many jails made, and from the newspapers it seems evident that many changes for the better resulting from these inspections and reports will be made.

In 1882 the Board of Corrections and Charities called the county agents together in convention at Jackson. An address was delivered by the President of the Board, papers of great interest were prepared and read by a number of the agents and others; and a general discussion followed each paper. Some of the subjects will indicate the matters considered, as, "Dealing with Accused and Indigent Children," "Putting Children into Homes," "Visiting Indentured Children," "Rights and Duties of the State towards Children Morally Exposed by their Surroundings." A general conference of agents followed, after the manner of conventions of Superintendents of the Poor. Since then, annually, such a convention has been held in different parts of the State, and the proceedings published by the Board of Charities and the publication distributed where it would do the most good. At the last annual meeting, the agents elected officers and became a perma-

nent organization, and the same beneficial results may be expected as from the organization of the Superintendents of the Poor.

BOARD OF PARDONS.

The Advisory Board in the Matter of Pardons was created by an act of the last Legislature, by which the Governor was authorized, with the assent of the Senate, to appoint four citizens of the State members of the Board (two from each of the dominant political parties), two for two years and two for four years, whose duty it should be to investigate and consider all applications for pardons or commutations of sentence made by prisoners confined at Jackson and the two houses of correction, at Ionia and Detroit.

The Board organized for business July, 1885. All petitions sent to the Governor, and those on hand at the time the Board was organized, have been referred to it; besides many petitions made to the Board directly. It is the custom of the Board to investigate cases as thoroughly as possible, ascertaining all the facts and circumstances relative to the crime, the trial, and the previous history of the convict. In these investigations the Board visits the prison and has personal interviews with the convicts who have complied with the rules of the Board in their applications. In considering cases, the Board does not give weight to the complaint that on the testimony the prisoner ought not to have been convicted, unless the case shows a very flagrant violation of justice, as one or two have. In other words, the Board does not assume to review the action of the jury. It has been the aim of the Board, in exercising its functions, to treat with great care the cases of young men, or men in for their first offense, especially with a view of giving such convicts a chance to reform. The system adopted in this class of cases is, when deemed worthy, to put them out on probation, after the manner of ticket-of-leave men. The Board has made a number of recommendations upon this basis, which have been acted upon by the Governor, and have proved so far very successful. In only one case has there been a failure, and in that case, immediately upon the breach of the condition coming to the knowledge of the Board, it caused proceedings to be instituted against the convict. He was tried for the breach of his parole, convicted and returned to the prison at Jackson to serve the balance of his original sentence. The Board has, in its investigations, discovered that there is among the pris-

oners a feeling that injustice is frequently done them in the great inequality of sentences for like offenses. The Board has found cases of convicts sentenced to the State Prison for rape, all the way from five years to life; and the worst cases have frequently received the shortest sentences. It has found this inequality of sentences running all through the prison, and this feeling of injustice is the cause of much dissatisfaction among the men,—that a wrong has been perpetrated upon them and that they feel justified in taking any course to get even. This is very natural and ought to be expected; but it does away with all the good results which might be hoped from punishment. When the prisoner is turned loose again upon society at the end of a fixed term, with this embittered feeling rankling in his breast, he becomes ten times the child of hell he was when society attempted to check his career in crime. The Board sees, also, plainly that a result of confining a young man who has committed his first offense with hardened offenders who have led alternately a life of crime and of punishment, is, that he loses all self-respect, and that the unvarying tendency is to make him a criminal for life. The Board is of the opinion that when a man has become an habitual criminal, he should be retained within the prison for life; but care should be taken that he should not be convicted of a second offense simply because convicted of a first offense. Such things do happen too frequently.

From these statements, it will be concluded that the Board is strongly in favor of the introduction in prison management of the ticket-of-leave, and of the indeterminate or indefinite sentence, as now generally understood; that is, upon conviction, sentence is passed for the time prescribed for that character of offense by the statute, leaving it to be determined whether the prisoner shall serve the maximum or minimum, not by the judge who tries the case, and only knows what of the history of the accused can be gleaned while he is on trial; but from the conduct of the prisoner while in the prison by the officers in whose care he is placed when they have learned his previous history and surroundings, and have studied his character while daily under their eyes or supervision.

The Board also favors suspension of sentences in cases of first offense, and that the culprit be placed under police surveillance for a period of time.

NATIONAL PRISON REFORM ASSOCIATION.

At the National Conference of Charities at Washington in June, 1885, through the influence of the Superintendent of the Detroit House of Correction and the members of the Board of Charities present, the National Prison Association was induced to hold its annual meeting at Detroit in October. Attended by many men from different States and Canada, for many years experienced in the actual management of prisons, and by many others for years and years known and honored for their zealous labors in prison-work and reform, this meeting excited much interest. However much some who were unfamiliar with the ideas advanced by the most prominent speakers were inclined to criticise and condemn, or to deride other results, it cannot be denied that much interest and thought was aroused throughout the State, and a desire created for the progress of the work, which will be felt for a long time.

The opening meeting, held on Saturday evening is said to have been the largest ever known in the world on the subject of prison reform.

Non-partisan government of prisons, the appointment of prison officers solely for competency, and their retention during good behavior, the classification and grading of criminals, separating the old in crime from young offenders, the nature and extent of punishment in prisons, the kinds of labor enabling a prisoner to gain an honest livelihood when discharged, the disposition and oversight of discharged prisoners, the indeterminate sentence, the control and management of jails by the State and not by counties, the advantages of non-intercourse between prisoners in jails, and the necessity of matrons in station-houses and jails, were some of the topics ably discussed by men whose reputation is continental and even world-wide.

The wonderful effects of the changes lately made in England, as shown by some of the papers, illustrated and enforced the principles and views earnestly advocated by the State Board of Corrections during the last four years.

The education of the people in these things was begun, and when they are brought to understand the nature and the extent of the evils existing in connection with them, reform will come, and these evils will cease.

THE PROGRESS OF THE MECHANIC ARTS IN THE
LAST FIFTY YEARS.

JAMES W. BARTLETT.

GENTLEMEN AND LADIES: In attempting to write a paper on the progress of the Mechanic Arts in the last fifty years, I find the field so vast that I can only hope to glean a little here and there, to note a few of the most glaring facts, to find out, as near as I can, what was the then state of the arts, and what they have arrived at, at the present time; to put in a prick-punch mark, "as it were," so that some other machinist, fifty years hence, can take up the subject where I have dropped it and carry it on another fifty years. No doubt he will ridicule the small beginnings that I consider so wonderful, and laugh at our ignorance of what are, to him, self-evident facts; but he won't hurt our feelings, for we shall have gone over to the majority. If I should confine myself to Michigan, I should have little to say, though some of the largest manufactories in America are situated in the State.

When this State was admitted into the Union there was hardly a trace of the Mechanic Arts within her borders; a few farmers scratched the earth on the banks of our great lakes and rivers, a few grist-mills were driven by the unstable winds, or by the slight falls in our sluggish streams; some were even run by the slow ox pacing his weary round; half a dozen small saw-mills, driven by water power, had begun to cut their way into the forest; steam navigation had commenced on the lakes, and there were four steam engines in or near Detroit, all of them not aggregating one hundred horse-power; the houses were mostly built with an axe, which was the most useful, and almost the only tool known to the inhabitants. The noble red man was still among us; hundreds of their canoes could be seen at once, from the banks of the river near Detroit; they had got out of the stone age, into the age of whisky. The Indians were not great mechanics; but three of their inventions have never been improved upon by the most skillful experts of modern times; the snow-shoe, toboggan and birch-bark canoe were perfected before Columbus crossed the Atlantic.

THE FIRST USE OF MACHINERY.

Probably the oldest, and certainly the most sacred use of machinery is in public worship; for praying-machines, moved by hand or driven by water power, are now, and from time immemorial have been in use. In Northern Asia they consist of revolving cylinders on which are carried or written a form of prayer. In modern times it is the words "Oom Nannie Puime Oom," something repeated thousands of times. These machines are set up along the highways, so that travelers can set them whirling, thus repeating thousands of prayers at each revolution. Water-falls are taken advantage of to turn them, and thus to send up constant streams of supplications; to the great saving of manual labor, as they keep going, no matter what sins their owner may be committing. So old is this custom, that one of our leading scientists, in a lecture on the discovery of fire, gives as his opinion, that the first fire known by man was caused by one of these machines taking fire from a hot bearing. For this reason fire has since been an object of worship, and the worship of fire preceded its use for cooking or heating.

The mysterious whirls and tops, of which so many were found in digging for the ruins of Troy, which were graven with unknown alphabets, were probably fly-wheels to hand praying-machines, similar to those now used in Thibet.

Andrew Wilson, in the "Abode of Snow," says: "I found the ordinary prayer-wheel used. A brass cylinder about six inches long and two inches in diameter, containing a long scroll of paper, on which were written innumerable reduplications of the Lama prayer, "Om ni pad ma houn," and which is turned from left to right in the monk's hand by means of an axle which passes through the centre. In the Lama temple I found a still more powerful piece of devotional machinery, in the shape of a gigantic prayer-mill, made of bronze, about seven or eight feet in diameter, and which might be turned either by hand or by a rill of water, which could be made to fall upon it. This prayer contained, I am afraid to say how many millions of repetitions of the great Lama prayer. The neophyte who showed the prayer-mill to me, turned it with ease, and allowed me to send up millions of prayers."

THE AGE OF STEAM.

The period, the close of which we are to-day celebrating, might be called the Age of Steam.

About the beginning of the nineteenth century, the all-conquering power of steam having burst the wooden fetters by which mankind had tried to confine it, and struggling in its iron bonds, began its mighty work. Without its aid, modern civilization would have been impossible, the horse and ox had lent their feeble aid, the unstable force of the winds had long been used, and where water was so situated as to run down-hill, the water-wheel was serving man in its weak way; even the ebb and flow of the tides had been utilized; but with all these forces, human muscles had to bear the brunt of the labor of the world, till steam came to man's aid. What are the muscles of man compared to this untiring power? For, by the use of four pounds of the poorest coal an hour, steam will do the work of eight men. A man working 300 days a year for thirty years, will accomplish only the amount of labor that can be done by 22½ tons of slack coal. The coal being worth \$1.75 a ton, so the labor of a man for an average lifetime, is only worth \$39.37½. According to the census of 1880, there was used in the United States, for driving the machinery of its 85,932 manufactories, 3,410,837 horse power. To drive this machinery by human labor, would take 27,286,693 men; and as there was but 14,744,942 men at work at all occupations, from preaching to ditching, we should have to enlarge our population immensely, before we could spare men for the purpose. And we also find that only 3,837,112 were employed at any manufactory, or at mechanical work; so it would take over eight times as many men to turn the machines as to operate them, and to do, in addition, all other mechanical labor, that does not require power, such as carpentering, hand-weaving, tanning and baking.

This 3,410,837 horse-power, is not nearly all that is used in the United States, no account being taken of engines used for pumping water, steam fire-engines, pile drivers, locomotives, or the thousands of engines used for farm purposes. Pumping water for Detroit takes 2,000 horse-power daily. If we depended on human labor for our water supply, it would take 22,000 able-bodied men to keep us in drinking water. What an addition to our population

this would be; as we find by the census, that less than one-third of mankind, in the United States, work for a living, the addition to the inhabitants of the city would be 66,000 people. Add to these, the mechanics to construct their houses, tradesmen to supply their groceries and dry goods, ministers, school-teachers and doctors, to take care of their morals, education and health, to say nothing of city officials, tax collectors, policemen and saloon-keepers. What a power could be shown by 22,000 intelligent voters, united in one interest, and voting as one man! What a calamity a strike would be! We should all have to take our pails and form a grand procession towards the river.

Within a few days I have found out that I have plagiarized from the works of an old citizen of Michigan, for a title of a poem written in 1830, by Major General Whitney, is "The Age of Steam;" but as I suppose this title has been used hundreds of times since, I won't change it, and I humbly apologize to our old ancestor for stealing his thunder.

I have overestimated the value of the labor of a man, for comparing him with the modern compound engine, his work for a lifetime only equals $9\frac{1}{4}$ tons of hard coal, or the value of 28.88 dollars in soft coal.

FREIGHT.

Before the advent of steam, civilization was confined to countries near natural harbors and the banks of navigable streams, for water-courses were almost the only highways known, the only exception being portages between two seas, where commerce had to pass for a short distance over land. The cheapest method of land transportation was by camels, well called the ships of the desert, and on their track over the portages between the Mediterranean Sea and the Indian Ocean great cities sprung up, the stupendous ruins of which are now in uninhabited deserts. Petrea, Baalbec, Palmyra, and many others, once flourished, whose names are forgotten, and whose sites are only marked by heaps of cut stone, and here and there a broken column. The want of harbors and rivers keeps the "Dark Continent" of Africa a barbarous country, except a narrow strip along the northern coast and the banks of the Nile, which from pre-historic times has been the seat of the highest civilization; the camel, introduced about the Christian Era, half civilized the countries bordering on the southern edge of the great desert; but in the South, on account

of the destruction of all horses and oxen by the seroot fly, the only beast of burden being man, the only merchandise that will pay for transportation is gold, ostrich feathers and ivory, and the never-failing crop of the country, Negro slaves, who transport themselves to the seaboard to do the work for the Christian races in the torrid zone. In America, all internal traffic was carried on by water, and all settlements were at the seaboard, or on the rivers and lakes; at every good harbor from Hudson Bay to Galveston settlements sprung up, and the banks of the Mississippi, Potomac, Hudson, Connecticut and St. Lawrence as high up as their first rapids, were peopled long before a tree was cut fifty miles inland.

The profitable fur trade raised up a race of half-amphibious wood rangers, who carried their birch-bark canoes, and packed their goods and furs round falls and rapids, and from the headwaters of one stream across the water-shed of the Atlantic, to those running into the Great Lakes and the Gulf of Mexico, making portages by trails worn by the moccasins of generations of Indians. This kind of travel was reduced to a system by the Hudson Bay Company in the Northwest; for in 1793, Alexander Mackenzie succeeded in crossing the continent, reaching the Pacific at Vancouver's Sound, by way of Frazer's river. He had in 1789 reached the Arctic Ocean, by the river that bears his name. In his works, I find a curious account of the method and cost of travel in those days, which did not materially change in that part of the country till after the Erie Canal was opened. The fleet started the first of May, from La Chine, eight miles above Montreal, with eight or ten men in each canoe, and their baggage, and sixty-five packages of goods, six hundred weight of biscuit, two hundred weight of pork, three bushels of peas, for the men's provision; two oil cloths to cover the goods, a sail, an axe, a towing-line, a kettle, and a sponge to bail out the boat, and gum and bark for repairs.

This is all they had for a voyage of five months, on the whole length of which they hardly passed a house; they slept on the ground where night found them, and took rain or sun, without shelter. Their course was up the Ottawa River, through Lake Nipissing, down the French River, through Georgian Bay to Detour, up St. Mary's River to the Sault, round which they carried their canoes, into Lake Superior, cruising round the north

shore to Grand Portage, 130 miles from what is now Duluth. The trip from La Chine is a hard road to travel; the *voyageurs* are frequently obliged to unload their canoes and carry the goods upon their backs, or rather suspended in slings from their heads; each man's ordinary load is two packages, though some carry three, the canoe being towed by a strong line.

Over the portages, the canoe and all the lading is carried; at some of them the rock is so steep and difficult of access that it requires twelve men to take the canoe out of the water; it is then carried by six men, two at each end on the same side, and two under the opposite gunwale in the middle. On the trip to Lake Huron, there are twenty-nine places where the canoes must be taken out of the water, and thirteen where it is only unloaded; the longest carry is 2,030 paces. They reach the Grand Portage in July, tote their packs over a nine-mile portage into waters running into Hudson Bay, bring over packs of furs for a return load, put to sea, and return over the same route to Montreal, by the last of September, having been five months on the way. Those of us that have been in those forests in summer, will appreciate how much they must have suffered from mosquitoes.

The cost of each canoe was.....	\$ 50
Pay of ten men.....	650
Clothing, ten men.. ..	100
Provisions, ten men.....	300
Net cost, two loads.....	<u>\$1,100</u>

Two canoe loads, goods up and furs for down freight, 11,700 pounds.

Net cost of freight, per pound, \$9.04. Add to this the guide, foremen, clerks, and the expense of a large force at Grand Portage, who stay there summer and winter, and it will make pretty costly freight. North of the Grand Portage, men are hired by the year, and the freight costs twice as much as the lower lake. For taking a bale of furs nine miles over the Grand Portage they pay a silver dollar, or one cent a pound, and board the men the year round.

And it cost something to feed them, where "corn is the cheapest provision that can be procured, though from the expense of transport the bushel costs about \$5.00 at the Grand Portage," being all brought from Detroit. The Northwest company shipped their

goods from Montreal in boats to Kingston, and from thence in vessels to Niagara, then overland ten miles to a water communication, by boats to Lake Erie, where they were received into vessels, and carried over that lake up the river Detroit, and the Sinclair to Lake Huron, and from there to the Falls of St. Mary, where they were again landed and carried for a mile above the falls, and shipped over Lake Superior to the Grand Portage. This is found to be a less expensive method than canoes, but attended with more risk, and requiring more time than one short season of this country will admit. For the purpose of conveying all these things, they have two vessels upon the Lakes Erie and Huron, and one on Lake Superior, of from 50 to 70 tons burthen. The fur traders purchased in Detroit Indian corn and flour; the corn was prepared in Detroit, by boiling it in a strong lye which takes off the outer husk, well washed, and carefully dried. This is the first manufactured article I can hear of, exported from the State; and it must have been a large export, as it was the only vegetable food used by the *voyageurs* above the Grand Portage; a quart boiled for two hours, with two ounces of suet, was a day's ration of the canoe men; it was called hominee. Under these conditions of expensive freight, and toilsome travel, no country could be settled; there being no outlet for the crops, no surplus was raised; furs being the only article of value enough to bear the expense of transportation to the seaboard. Having little commerce, everything except luxuries must be raised, or made on the spot; the inhabitants raised grain and cattle, and caught fish, enough to supply themselves with food; the skins of animals, and cloth spun and woven by the women, from wool from their sheep, furnished their garments, so that there was no motive for labor, except to supply their daily wants; the natural increase of the inhabitants was the only accession to a population that cared little for what was going on in the outside world. The first step in improvement was caused by the opening of the Erie Canal across the State of New York, which gigantic enterprise connected the Great Lakes with the rest of the United States, changing their seaport from Montreal to New York, which, with the advent of steamboats on the lakes, started the swarm of emigrants that have long ago reached the Pacific Ocean, and are now gleaning back over the field for the spots they passed over in their hasty march. While Michigan remained a Territory, it

seems to have been avoided by settlers; those who came about that time were from two to three weeks on the way from New York, six to ten days on the canal and four or five days by steamer on the lake; the lake fare was from \$15 to \$20.

Erie Canal was completed in 1825. In 1834 the number of tons of freight that passed Utica was 396,000, 57 per cent. being lumber and cord-wood.¹ The only freight that seems to have come from the upper lakes were furs. In 1885, the through freight between Buffalo and Albany was 1,597,626 tons, worth \$47,892,167, and probably more local freight was carried in 1885 than the total amount in 1834.² Last year 5,671 canal boats cleared from Buffalo, their average cargo being equal to 8,000 bushels of wheat or 240 tons; they reach tide-water in from eight to ten days. The speed at which cargoes are handled is something marvelous.³ The barge *Golden Age*, the second in size of any craft on the lakes, has arrived at Buffalo in the morning, discharged 91,500 bushels of wheat, taken on 2,600 tons of coal, and left port the same evening; she is six days in reaching Chicago, two days in unloading the coal, and four hours loading with wheat; 1,800 tons of coal has been loaded on a vessel in 119 minutes, and 6,550 tons on four vessels in eleven hours.⁴ Many of our large steamboats make a round trip a week, and some have made twenty-two in a season, and they run with great economy, so freights are cheap.

This year the average freight on the canal is 5 cents, and from Chicago to Buffalo, 2½ cents a bushel, though they were much lower last year; now it costs, with elevator charges and insurance, from 9 to 10 cents to deliver a bushel of wheat at tide-water, from Chicago, and it has been done as low as 6 cents, which is at the rate of one-tenth of a cent a pound. Sixty years ago it cost 9 cents a pound without insurance. Therefore, freight was ninety times as high in 1826 as at the present time. Even the railroad freights are not so very high, for they will take a barrel of flour from Chicago to New York for 50 cents, carrying it 950 miles for what a drayman would charge to haul it two miles.

¹ Canal report, 1834.

² Charles G. Irish, Collector of Statistics, Erie Canal.

³ F. Salter, Esq., Grand Trunk R. R.

⁴ Mr. Langdon, D., L. & W. R. R. Co. Mate of the *Golden Age*.

The loading of canal boats is done at great speed, as 8,000 bushels of wheat is spouted into them in an hour from the elevators ; but the speed on the canal has not increased, as two horses at a walk is still the method of propulsion, though steam is sometimes used, one small engine driving two boats, but it is not found economical to increase the speed, over that of the horse, as it washes the banks too much. This spring, the canal is used to its utmost capacity, and much freight intended for the canal was shipped by the railroads. It is proposed to lengthen the locks to increase its capacity.

I quote from a paper read by Edward Atkinson before the American Association for the Advancement of Science at Ann Arbor, August, 1885: "In the period under consideration, the screw propeller has finally displaced the paddle-wheel in all ocean traffic. At the same time the compound steam engine has been perfected, the end of both being that the fuel required has been vastly reduced, and where it required over 200 tons per day of coal to cross the Atlantic twenty years since, a much more capacious steamer is now driven across by the use of 35 tons."

But this statement is far from showing the full change. The important matter is the ratio of fuel to the weight moved ; every pound of coal now carries thirty-two times as much cargo across the Atlantic as could be carried thereby in the earlier days of ocean navigation.

The steamer "Persia" in 1850, consumed 14,500 lbs. of coal to each ton of cargo, while even the racer "Arizona" in 1882, consumed only 450 lbs. per ton of cargo. In the freight steamers, assuming paper to have the same calorific value as coal, the combustion of an ordinary letter, such as carried by mail for a two-cent stamp, would move a ton of cargo and its share of the vessel two miles. A lump of coal which can be mailed anywhere in the Postal Union for one cent, would do the same work. Thus has room been made for cargoes of provisions or other merchandise, now carried at low cost more than half way round the world, to feed and clothe the people of the most distant lands.

LIGHT-HOUSES AND WATER COURSES ON THE LAKES.

In 1836 there were but nineteen light-houses on the lakes, seven of these were below the Niagara river. The first built on the upper lakes was at Marblehead, Ohio, in 1821. Buffalo Light

was built in 1828, Fair Port, Fort Gratiot, Cleveland, Beacon, Turtle Island and St. Joseph, in 1831, Pelee Island in 1833, and Conneaut, Ashtabula, Cleveland, and Huron in 1835, making ten below Detroit and two above. There was no light from the head of the St. Clair on Lake Huron to the foot of Lake Michigan. The few vessels navigating the upper lakes could only draw eight feet of water, and to get that, had to go round by the North Channel through St. Clair Flats. In 1857 St. Clair Flats cut was made, also that through Lake George, and the canal was finished round St. Mary's Falls, so that boats drawing thirteen feet of water could go to Chicago, and a depth of twelve feet could be carried into Lake Superior. New light-houses were constantly being built and cuts were made into Chicago, Saginaw, and Portage Lake. Harbors of refuge were lighted, and extensive piers were built, making artificial harbors at Chicago, Sand Beach, Marquette and other places. A new cut was made through the Flats into Lake St. Clair in 1871, and afterwards deepened to twenty feet. In 1872 a canal was dug from Green Bay to Lake Michigan. A new set of locks were opened September 1, 1881, giving sixteen feet of water into Lake Superior. At Lime Kiln Crossing a cut is now in progress through solid rock, which will give a depth of water of twenty feet, which is as deep as will ever be needed, as that is all the water that can be carried over Lake St. Clair.

There are now 354 light-houses on the lakes, 239 of which are American and 115 Canadian; twenty-two of these are provided with fog-signals. The lakes have been accurately surveyed and charted. Buoys and beacons mark all channels and shoals. Hay Lake channel is being opened, which will lessen the distance to Lake Superior eleven miles, besides making a straighter course, nineteen feet deep, that can be lighted so that St. Mary's river can be navigated at night as well as by day. The new locks at Sault Ste. Marie are opened and shut by the power of water wheels driven by the falls, the method being hydraulic cylinders worked by a pump, a pressure of 300 pounds being carried, and oil used instead of water, to avoid freezing. The grounds are lighted by electricity, so that the locks are used by night as well as by day.

The first year of the opening of the canal, the freight tonnage passing through the locks was only 5,000 tons. In 1885 it had

increased to 3,256,628 tons, increasing gradually till the new locks were opened in 1881, when it almost doubled in three years. Coal freight increased from 100,000 tons in 1879 to over 900,000 tons in 1885.

Wheat as a down freight increased, at about the same ratio as coal; last year it amounted to 15,500,000 bushels.

These water-ways and light-houses show a wonderful increase in the perfection of modern engineering. At Lime Kiln Crossing the work of deepening the channel is carried on in a swift current in the direct course of all the shipping to the lower lakes. The drills are moved by steam and the charges of dynamite exploded by electricity, without removing the scow; each hole is drilled at the exact place marked on the chart, the position being directed from instruments set on shore. One of the great dangers of the St. Mary's river was the Neebish Rapids, where the channel ran between immense rocks. The Canadian government had been at work twenty years blasting at these obstructions, and might have been at it twenty years more before they had got a safe channel. But three years ago the United States River and Harbor Engineer set a steam dredge at work on the other side of the river, and in a few weeks dug out a perfectly straight channel twenty feet deep, changing the whole course of the navigation of the river.

The light-houses on the lakes are of every variety, from timber lattice-work to permanent structures of brick, stone and iron, and in every situation, from the tops of high hills to foundations laid in water twenty-two feet deep; some are beautiful additions to the architecture of large cities, and others are in the roughest waters of the lakes out of sight from the nearest land. Who has not heard of the Pharos of Alexandria and the Colossus of Rhodes? And the books are full of the descriptions of the great achievement of building a light-house on Eddystone Rock, which, at the time, without steam, was a wonderful work. The rock was fourteen miles from harbor and almost covered at high tide, so the work could only be carried on at low water. Three structures were built within sixty-three years, before one could be got to stand the weather. The inscription on it is, "Except the Lord build the house, they labor in vain that build it."

Few who are not mariners, noticed an advertisement in 1882, giving notice that a light would be shown at Stannard Rock, Lake Superior; and few except fishermen have been within five miles

of it. The problem was to build a light-house forty miles from the nearest harbor, in twelve feet of water, in an almost arctic climate, where the terrible force of moving ice was to be guarded against as well as the fierce dash of the waves. A crib ninety feet square was built at Huron Bay, towed out by four steamers, and sunk at the proper place on the reef. This formed a foot-hold for future operations. A ring of boiler-iron fifteen feet wide was hung over the water's surface by twenty-four long screws and scribed true with the bottom of the lake, which was a rough trap-rock varying in depth of water about seven feet in the circumference of the ring; at one place it varied seven feet in ten feet in length. This ring was cut off at the scribed mark, armed with a bag of okrum and lowered to the bottom by the use of screws from which it had hung. Plates were riveted on to raise it to thirty-three feet; it was then pumped out dry and filled with concrete, making a monolith of concrete, solid as a rock, sixty feet in diameter and thirty-five feet high. On this was erected a round cut-stone tower twenty-six feet in diameter at the base, surmounted by a cast-iron balcony, watch-house and lantern, the centre of the lens being seventy-eight and a half feet above the water. The structure is divided into five stories, which are used for living-rooms, occupied by the light-keepers, and below the surface of the concrete are rooms for two fog-signals and cellars for coal and supplies. The weight of the concrete in the base is but little less than 20,000 tons, and much more than this weight of stone was used for keeping in place the temporary crib work. Add to this the cut stone and iron for the tower, which was quarried and prepared on shore and carried over forty miles of water. Landing could only be made at the crib in calm weather, and the working season was only four months in the year, owing to the inclemency of the weather. Fifty years ago such a work would have been impossible, but with the help of steam, most anything can be done.

The first of this class of work on the lakes was at Spectacle Reef, where a coffer-dam of wood was sunk in substantially the same manner as that at Stannard Rock; the dam was pumped out, the rock below was cut level, and a structure built from the bottom with massive cut stone dove-tailed together and pinned to the rock below. This, being the first great work of this kind, was a most daring and successful piece of engineering. Spectacle Reef is sixteen miles from the nearest harbor, and in the roughest part

of Lake Huron. You would have to search many public documents to find who was the projector of these great works, which few of us have ever heard of.

STEAMBOATS ON THE LAKES.

The first steamer on the lakes was the low-pressure, side-wheel, beam-engine boat "Ontario," built at Sackett's Harbor, in 1816. She was schooner-rigged, with a small cabin abaft the wheel-house. She was 110 feet long, 213 ton burden, her cylinder was thirty-four inches diameter by four feet stroke. The first steamer which ever stirred the waters of Detroit River was the "Walk in the Water," arriving at Detroit August 22, 1818. The first boat built in Michigan, in 1834, was named "Michigan First," and was built in Detroit at the foot of First street, by Capt. Blake. She was 470 tons burden, and had two low-pressure beam-engines, and cylinder boilers set in brick-work; the cylinders were 36 inches in diameter and nine feet stroke. Five other boats were built in this State before 1836; ninety steam crafts were built on the lakes before 1836, aggregating 23,222 tons, the average being 258 tons; forty-two of these were built below Niagara Falls, leaving forty-eight that could have reached Michigan; and, as many of these were lost early in their career, it would be safe to assume that not more than twenty steamboats were running on Lake Erie in 1836.

There was less than one arrival of a steamboat a day at Detroit. Four trips of the "Michigan First" were sufficient to do all the business between Buffalo and Chicago for the year 1836;¹ and it was nine years before the sound of an exhaust pipe was heard on the waters of Lake Superior, when the "Independence" was moved round the falls on rollers and launched above the rapids. Compare this with the shipping of to-day.² Last year there were 46,939 passages of vessels through the Detroit River, carrying a freight tonnage of 19,645,271 tons. Navigation being open on the average of 224 days in the year, so 209 vessels a day pass Detroit, being 8½ an hour for the whole season, and more vessels pass and more freight is carried through the locks at the Sault into Lake Superior than passes through the Suez Canal, the great thoroughfare between Europe and Asia.

¹ Theo. Hinchman.

² General O. M. Poe.

Almost every style of engine now used for paddle-wheel boats was early in use, high and low pressure, double and single beam, horizontal, and square and side-lever and even the compound were tried. The first horizontal engine had fly-wheels, and one running to Mount Clemens had the paddle-wheel driven by a belt; but most of the engines used before 1832 were of the so-called "Pittsburgh Style," having one or two cylinders from 16 to 24 inches, and from 7 to 9 feet stroke, with the poppet valves at each end, worked by long levers, moved by wippers on a rocker—shaft, running across the centers of the cylinders, driven by an eccentric. The connection-rod was of wood over twenty feet long, driving cast-iron cranks. The shafts were of cast-iron, the bed-plates of wood with a light plate of iron, to carry the cylinders and slides. From two to five two-flue boilers 20 to 24 feet long, were used, placed below deck and cased in brick-work.

This style of boiler held its place till long after 1850, at which time the first tubular boilers were built, tubes being introduced at that date. They were superseded by the return tubular-boiler, which has held its place till to-day.

When Illinois was being settled, from 1842 to 1852, was the palmy time for this class of boats; several passed Detroit every day packed with emigrants, like sardines in a box, some boats carrying 1,500 passengers. They must have carried very high steam, as the sound of their exhaust could be heard at Detroit as they entered the river at Malden, two hours before they arrived at the city.

Between 1850 and 1860 this class of boats was superseded by those driven by low pressure beam-engines, the largest of which was the "Plymouth Rock," 1,991 tons burden. She was used for passengers between Buffalo and Detroit. Her cylinder was 82 inches in diameter by 12 feet stroke, which was the largest ever used on the lakes. Her wheels were 36 feet in diameter. This style of engine is the only one now in use for side-wheel boats. Many boats have been built of this type, and some of them are very fast; even as high as twenty-two miles an hour is claimed for some of them. The fastest mercantile boat in America is of this type. They are particularly adapted for river navigation and for shoal water. The largest beam-engine ever built is on the "Pilgrim," now running on Long Island Sound. The hull is 374 feet long and 88½ feet wide over all; depth of hold 18½ feet, steam-cylinder

110 inches diameter by 14 feet stroke; each shaft is 26 inches at main journals by 40 feet long, which is the largest shaft ever made in the world.

The fastest speed ever made by a steamer was by an Austrian torpedo-boat, which was run at the rate of 27.66 miles per hour, her average speed being 24.027. The first propeller was built on the lakes in 1842; and a few came into use every year until 1855. They were mostly small, the largest being 400 tons burden. In 1856 and 1857, fifty-six were built, many of which were 900 tons burden. This increase was owing to the opening of the St. Clair Flats cut. By 1870 many propellers were in use, of 1,200 tons. The first to reach 2,000 tons was in 1876.

As the channels were dug deeper, the boats were built larger. The standard propeller was an upright cylinder working down to a crank shaft. Before the canal was deepened to twenty feet, the wheels could not exceed nine and one-half feet in diameter. To drive such a wheel required an engine with twenty-eight-inch cylinder; both high and low pressure were used. The non-condensing engine, with one hundred pounds of steam, was considered the most economical. Propellers were built of every size, from four-inch to fifty-two-inch cylinders; some of the great tugs for towing rafts using two thirty-inch cylinder engines. Compound engines, having been experimented on for many years, about 1880 began to take the place of all others. The steeple compound having the high steam piston working on the same rod as the low steam piston, this style had the merit of cheapness of construction; but for economy of fuel they were far surpassed by the fore and aft compound, on which both cylinders acted as a separate crank, the cranks being set at right angles to each other. The largest boat on the lakes is the "Onoko," which is 302½ feet long, 39 wide and 25 deep, with 4 masts and 2 decks, and 6 water-tight compartments. Her load on 14½ feet of water is 3,000 net tons, or 108,000 bushels of wheat and 164,000 bushels of oats. She has compound engines, high steam 30 inches, low steam 56 inches, 4 feet stroke, and runs ten miles an hour on the round trip.

The most common and cheapest way of carrying freight is by a large barge towing two or more sailing barges. I will give a statement of the freight and fuel of a steam barge with two barges in tow. The power of steam barge being one high steam cylinder 26

inches in diameter, and one low steam cylinder 44 inches, 42 inches stroke, and 80 pounds steam pressure.

Net tons carried by three barges, 70,087 tons, $7\frac{1}{2}$ miles an hour.

No. miles run by three barges is 14,453 in ten trips.

Tons of coal consumed, 1,190 tons.

Pounds of coal to carry 70,000 tons of freight one mile 164.55.

Pounds of coal to carry 1,000 tons of freight one mile, 2.35.

The largest and fastest steamer afloat is the "Umbria" of the Cunard line; length 520 feet, width 57 feet, depth of hold, 40 feet, tonnage 9,806. The engines are triple compound, one 71-inch, and two 105-inch cylinders. At 110 pounds of steam, turning 70 revolutions per minute, she runs 20.18 marine miles an hour, developing 14,321 horse-power; being the highest indicator card ever taken.

The number of American side-wheel steamers now afloat in the

Lakes is.....	40
Canadian is.....	110
Total.....	150
American propellers is.....	887
Canadian propellers is.....	202
Total.....	1,089
Total number of steamboats, 1,239	
American tonnage.....	289,864
Canadian tonnage.....	82,057
Total.....	371,921

This shows the progress made in fifty years. We have over sixty times the number of steam crafts, and one hundred times the tonnage in 1886 as we had in 1836. The total number of steam crafts in the United States is 5,513.

Some old shipping news, from the Buffalo Gazette, October 10, 1811. The schooner Salena, Capt. Davis, arrived at this port (Black Rock), September 30, 1811, with a cargo of furs, valued at \$150,000. (This was one of the 70-ton schooners of the Northwest Company, and few of our largest steamers ever had such a valuable load).

1815. There are now two brigs, thirty-five schooners, and fourteen sloops on the lakes.

1817. Average weekly arrivals and clearances, six.

1818, August 27. The steamer *Walk in the Water* (the first steam craft on the upper lakes), started for Detroit with 150 passengers, at \$20 a head.

1819. Six arrivals a week.

1831. Number of vessels on Lake Erie; American sailing vessels 58, tonnage 3,118; British sailing vessels 17, tonnage —; American steamers 10, tonnage 1,906.

Daily line of steamboats for Detroit, Niagara, Wm. Penn, Ohio, Enterprise, Superior, Shell-Thompson.

November 24. The whole number of vessels navigating the western lakes, is about 100, averaging 70 tons.

Detroit Journal, 1831. The number of entries and clearances at Detroit in 1830 was 1,000, average value of cargo about \$5,000.

Buffalo Patriot, July 4, 1832. The steamboat *Pennsylvania* was launched at Erie; she is 400 tons burden, and has double engines 80 horse-power, being decidedly the largest and most splendid boat on the lakes.

The *Walk on the Water* made between eight and nine miles an hour, and in 1819 made her trips to Detroit in five days, and to Mackinaw and back in two weeks. In 1820 she left Detroit every Saturday.

RAILROADS.

Fifty years ago the railroad was in its infancy. It was not till 1837, that the seventy miles between Albany and Utica were completed. Passengers from New York to Detroit were from ten to sixteen days on their way, going by steamboat on the Hudson, by rail to Utica, by canal to Buffalo, and steamboat or sail on the lake. The first locomotives started in Michigan in the fall of 1837. They were brought out by Joseph Briscoe, who still lives in Detroit, and were built by Baldwin in Philadelphia. The cylinders of these locomotives were ten by fifteen inches stroke. The road was two ditches, lengthwise to the road, in which were placed long timbers cut by the roadside, flattened on the bottom and gained in at the top, to receive cross-ties which were held in place by wedges. On these were spiked oak stringers five by seven inches, and on these were spiked iron bars $2\frac{1}{2}$ by $\frac{5}{8}$, making, when new, a smooth and solid road, but a few years after, the most dangerous track that a locomotive ever was run over. In 1842 the road was completed to Jackson, making a small fraction

of the great net-work of iron that now covers the United States, there being length enough to reach around the world.

To level the way for the rails, hills have been cut down, valleys filled up, mountains tunneled and rivers bridged. They pass through great cities and uninhabited deserts, linking the ends of the earth together, and annihilating space. Passengers can now go from New York to San Francisco in seven days, sleeping and eating while traveling, without leaving the car. The first trip from the Atlantic to the Pacific by canoes, took Mackenzie as many years; and Lewis and Clark were twenty months on their trip from St. Louis to the mouth of the Columbia river. To-day they could repeat their trip in four and one-half days.

The first locomotive used in America was in 1829. It was built by Peter Cooper; it was tried on the Baltimore & Ohio Railroad, making thirteen miles an hour. One carriage was attached carrying thirty-six passengers. It was rated at one-horse power. The standard engine of 1836, had ten-inch cylinders, sixteen-inch stroke. It was inside connected with the two driving-wheels four and one-half feet in diameter, and a pair of pony wheels in front, though some builders had adopted the 4-wheeled truck-frame now in use; they all had horizontal boilers, substantially like those now used. Only two eccentrics were used, which had to be turned on the shaft in reversing. Next came two eccentrics with hooks above the rocker-pin, lowered by cambs in reversing; the bottom of the hook was enlarged to a V-shape, so as to catch the pin easily. All these styles necessitate hand-levers, and it was a hazardous job to reverse an engine at a high rate of speed. The next improvement was to connect the hooks by links, one rod being under the pin and the other over.

Many had cut-off valves of every known style, the separate seat came first, and afterwards the riding cut. About 1847 the first link motion was introduced from England. This was adopted at once by all the builders, and holds its place till now. In 1840, Hinkley and Drury commenced building outside connected engines, which style has superseded all others. The old engine had no cab, the engineer being out to the weather. Wood was the only fuel, and great spark arresters were necessary; cow-catchers came early into use, and also sand-boxes. Steam gauges came in in 1850, followed by the pony pump and injector; few engines were in use with more than a single pair of drivers until

1840. The first cars had only four wheels, and one wheel on each axle was loose on the shaft, and held by a pin and washer. The modern passenger car is sixty feet long, and the sleeping cars are fitted up in most expensive manner; they have paper wheels and run with the most perfect smoothness. The standard freight car is thirty-four feet long and will carry twenty tons, each car having truck-frames at each end, and provided with eight chilled wheels. Refrigerator cars are largely in use; meat killed in Chicago being shipped to New York and thence to Europe. Tank cars carry petroleum, when beyond the pipe lines, which are laid in the ground from the wells to the seaboard, through which the oil is pumped in immense quantities for thousands of miles. Robert Stevenson wrote in 1838, "Small engines are losing ground, and large ones are daily demonstrating that powerful engines are more economical." He sends a sketch of his latest engine, weighing nine tons; and capable of taking one hundred ton gross load, at the rate of sixteen or seventeen miles an hour on a level. The largest engine of to-day weighs seventy-eight tons; and the standard locomotive of the Michigan Central road drew 800 gross tons. The fastest speed ever made by a train was at the rate of eighty-four miles an hour.

At the close of 1884 there were 125,379 miles of railroad in the United States, which cost \$7,476,865,782; number of passengers carried, 334,814,529; number of passengers carried one mile, 8,778,581,061; tons of freight carried, 400,453,439; tons of freight carried one mile, 44,725,207,677.

If this amount of freight was to be transported over such roads as we had in Michigan in 1836, it would have to be carried on pack-horses, and it would require over 200,000,000 animals, working 365 days in the year. Allowing nine feet for each horse, it would make a caravan over thirteen times around the world at the equator. If carried on single wagons, on a good turn-pike, six miles an hour, it would require 20,422,470 teams; at twenty feet for each, the procession would reach over three times around the world. There was in Michigan in 1885 5,219 miles of railroad, 2,780 locomotives, 1,218 passenger cars, 598 baggage cars, and 84,810 freight cars. Number of miles run, 1884, 62,201,089. Number of passengers carried, 24,782,322. Number of passengers carried one mile, 1,025,680,909. Tons of freight carried one mile, 6,154,447,358.

There are in the United States and the connecting roads in Canada and Mexico 27,167 locomotives, 20,038 passenger cars, 6,467 baggage and express cars, and 806,960 freight cars. If these were all made up into one train, it would reach 5,067 miles.

MACHINE SHOPS.

My brother machinists may be interested in a description of a machine shop fifty years ago. Most of the appliances known to-day were then in use, for about 1835 the first iron planer was imported from England. If my memory serves, the table was twelve feet long, and it would plane three feet square. It was a crude, clumsy machine, the bed being worked by a chain and the shifter thrown over by a ball on the end of a lever. Planers did not come into general use till some years after. I commenced as a machinist in 1842, in a shop employing about fifty men, working on cotton machinery.

The lathes were small, the largest not swinging over thirty inches; about half were hand-lathes; there was but one screw-lathe in the shop, mostly used for cutting taps and worms. The bed-frames were of wood; no planer was obtained till 1846. Much turning was done on hand-lathes. Screw bolts were mostly turned by hand and cut with chasers (a set of shoulder tools and chasers would now be stared at by modern machinists, as relics of an extinct race, like the stone arrow-heads or the trilobites found in the rocks); though such tools were used for turning and cutting all small bolts in 1863 in the largest shop in Detroit; and men are now living who have used them. The lathe beds, for want of planers, were all chipped and filed; no wrought shafting was in use; it was cast in the clutch-couplings, and was square, laged out, and covered with wood, forming a drum; laging was nailed to form pulleys and the whole turned off in its bearings. Heavy shafting was cast with wings, to which gears were fitted by laying out, and chipping to the line with cold-chisels.

All turned fits were made tapering, and the gear caulked or riveted on, like the modern piston fits; keys were not used to fasten work to shafting; and turned pulleys, except very small sizes, were unknown. Gear cutters were largely used, as small castings were not as perfectly made as they now are. Babbiting, or pouring soft metal into a harder shell, was unknown.

Most of the work was done by hand-tools, the file and cold-chisel

played a great part in the business. Few machinists of to-day would care to undertake to chip and level such surfaces as valves and seats, or in the beds twenty feet long; but then it was the only method. It took a long time, and the work was never well done; for hand-work can never compete with that done on a machine.

Allow me to go out of my way and say something about the men who did the work; for that was in the good old time that we look back to with such longing. The wages of a machinist in the shop I first worked in, were \$1.00 to \$1.25 a day; one nabob of a pattermaker received the great sum of \$1.50. For this sum, they went to work at five o'clock in the morning, and worked till half past seven at night, with an hour for breakfast and three quarters for dinner. It was several years before we obtained eleven hours a day. It has now been ten hours a day for twenty-five years or more, and we grumble at that, even though we may get more than twice the wages that we did forty years ago; and we are hoping to get the same or higher pay for working only eight hours.

I am glad the world has moved so far in fifty years.

In another thing we have improved on the good old times of the Harrison campaign, when we hallooed for \$2 a day and roast beef as the ideal thing to be desired. I doubt if any man could have kept his place, if he did not vote as his employer wished. Certainly four years later, we were all of the same stripe of politics, who worked for the great corporations. Now-a-days the bloatedest bond-holder would not dare to dictate how his men should vote; and if he did, they would probably vote the other way. I know the condition of the machinist is better than it was when I first joined the guild; he has better pay, better houses, better education, better living; and I hope he will keep on improving for the next fifty years.

Few boys now learn more than one branch of the business; a lathe-man and a vise-man have separate trades. Few men can do all that pertains to building a steam engine. In the great factories of specialties, a man may work for years on the same machine, doing the same thing over and over again. Of course the work is well, quickly and cheaply done; but it don't make a machinist of the man, as a boy could learn such an art in a few weeks. The tendency at present is to get along with the cheapest

labor; so we are making no machinists. Where the new stock is coming from, I am unable to see.

Large machine shops were started before 1836; one in Lowell, Mass., employed over 1,000 men, on cotton machinery. Now the country is dotted with them. In them are made locomotives, portable engines, steam pumps, governors, fire-arms, cotton-machinery, sewing-machines; and numerous other staple kinds of iron work are made in duplicate, and sold to the trade. The making of fittings for steam and gas pipe employs armies of men. I contemplated making a list of the various attachments made for this class of goods; but I found it would be such a long catalogue I should have no room for anything else.

The machine shop proper, or rather the job shop, is seldom of a very large size. Those in which the largest engines are made employ comparatively few men; for no one makes marine and water-works engines on stock for chance customers. They are all specially designed for the work they have to do, and are the labor of months or years; and the shops for repairing must be near where the work is to be done. There are many such shops in Michigan; but few, and none of large size, that work on specialties. In Detroit, three are equipped for making globe-valves; one in Battle Creek for portable engines; and wind-mills are made in Jackson; but most of this class of goods are brought from other States. The first machine shop in Michigan started at the foot of Cass street, in Detroit, before 1833, by Dorr & Weber. In 1836 it was quite small, having about six lathes, mostly hand lathes, the largest swinging about thirty inches. They did repair and job work; put engines (that were built in other States) into boats built in Michigan. Their foundry cast kettles, plow-points and many other castings they could get to do in this frontier settlement. Under the superintendence of Patrick Keaven, this was the pioneer of the numerous shops that have made Detroit a great machine center. The building of locomotives was started in 1852, but was abandoned. Iron bridge-making, started in 1861, has proved successful. We have built all the water-works engines for Detroit; the complicated machinery for the locks at Sault Ste. Marie, and the iron-work and machinery for the great sub-marine works at Waugoshance, Spectacle Reef, Stannard's Rock and Bar Point; the lanterns and other iron-work of most of the light-houses on the lakes; all of fog-whistles in use, and

we also built the engines and converters for the great Bessemer-steel plants at Wyandotte and those at North and South Chicago, one of which is one of the largest steam engines in the world, indicating 12,000 horse-power. But it is by our steamboat engines that we have acquired our greatest reputation. The finest and largest engines on the lakes were built at the five shops engaged in that manufacture. One concern that started in 1869 has built for different boats: 22 high pressure engines from 20 to 40 inch cylinders; 12 condensing engines from 34 to 50 inch cylinders; 22 compound engines with high steam, 16 and low, 28 to 28 and 48½; 61 marine engines; 71 land engines from water-works to pony-pumps; 132 engines in all, besides doing a large amount of steamboat repairs and other job work. Since 1876 they have built 155 marine boilers, weighing 3,758,915 pounds. To do all this they have 8 lathes, 4 planers, 6 drills, 1 slotter, a traversing crane worked by steam, 6 forges, 2 cupolas, 39 and 64 inches in diameter; and for making boilers, 2 sets of shears, 3 punches, 1 riveting machine, 1 set of rolls, and 4 forges. This is a large amount of work for so few tools.

The great car works make more show, there being two in Detroit; one of which employs 2,250 men and running four steam engines, they turn out sixty freight cars a day; and three car-wheel foundries cast 875 chilled wheels weighing 240 tons, and 160 tons of other castings daily.

But the greatest amount of machine shop work has been the countless saw-mill engines, boilers and machinery that have been turned out in every part of the State, beginning nearly fifty years ago. Every few miles of territory has had at some time a saw-mill, which, when it has cleared off all the timber within reach, was moved or abandoned. The grist mills trade has its hundreds of engines, following the march of the saw-mills, and grinding the crops from the land which they have cleared. The preparing of the lumber for its various uses, requires many sash and blind works, stave and heading mills and pail and wooden ware manufactories. Lately, lumber, instead of being shipped in a crude state, is mostly planed, tongued and grooved, made into siding, or cut into lengths for boxes; even the entire wood work of houses is prepared here and shipped to all parts of the States.

To illustrate our progress, I quote from the life of James Nay-smith: "We next had a pair of 200 horse-power engines in

hand." At that time such power as two hundred horse was scarcely thought of. They formed a noble object in the great erecting shop. Fifty years after, the then most powerful engine in the world, sixty times as large, and rated at 12,000 horse power, was erected in Michigan, and but few people knew about it or cared to go to see it.

The largest machine-shop tools in the world are used in the United States. I quote the following dimensions and particulars of the largest planer ever built and erected in any machine shop :

"Length of bed, 40 feet ; length of bed-plate or table, 13 feet ; width, 16 feet ; width between uprights, 18 feet ; height of uprights from table, $17\frac{1}{2}$ feet ; total height from floor, 23 feet 9 inches. Will plane 30 feet long, 18 feet wide and 13 feet high. The table is driven by a double-threaded screw $7\frac{1}{2}$ inches diameter, having a 3-inch pitch. Total weight 200 tons gross ; will plane lengthwise and cross-wise, and since the planer was erected attachments have been added for boring and slotting also. The power required to drive the planer is about 14 horse-power."¹

I quote from another letter :

"The two lathes you saw building in our works, are of the following dimensions: Length, 90 feet ; swing, 10 feet ; weight, 150 tons each. We could cut a screw on them 70 feet long, or we could swing and finish as large a gun as has ever been made in Europe."²

Boiler-making was first started in Michigan in 1833, when James Brennan came to Detroit from Buffalo, to build the boilers for the "Michigan First," and established a shop that bears his name to-day.

Boiler-plate at that time was imported, and the sheets were all 26 inches wide. Large boilers were built of this awkward material. Compared to the boilers of to-day, they look like patch-work. The first boilers were cylindrical ; next came the two-flue boiler, which has held its place in our saw-mills. The introduction of lap-welded tubes, changed the whole style of marine-boilers, and those in all places in which the cost of fuel was of any object.

Boiler material has wonderfully improved. The old English

¹ David B. Macomb, Chief Engineer of U. S. N.

² Wm. P. Hunt, South Boston Iron Works.

iron was not trustworthy at over 30,000 pounds with the grain. It has been replaced by American iron, at 55,000 to 60,000 pounds tensile strength, and iron has for the last ten years been superseded by steel, which is equally strong in every direction, and is used in boilers as high in tensile strength as 70,000 pounds to the inch. Sheets are rolled to any length and thickness, up to 100 inches wide and 6,000 pounds weight.

The United States laws for the inspection of marine boilers have greatly diminished the risk of explosions. Racing steamboats no longer have a nigger on the safety-valve, as in old days, and the loss of life of passengers from that cause is almost unheard of, though no law can do away with carelessness and recklessness in men. It can make the strength of the boiler so much greater than the steam allowed by the locked up safety-valve, that little chance is left for accidents. There are many boiler shops in Michigan; five shops in Detroit are rigged up for making the largest marine boilers, having several styles of power-riveting machines; punching, shearing, drilling and scaffing the sheets is done by steam power. The two boilers just completed in Detroit for the Greyhound, are the largest in diameter ever built, viz.: $15\frac{1}{2}$ feet diameter, $12\frac{1}{2}$ feet long, 350 inch flues and 261 $3\frac{1}{2}$ inch tubes; shell, $\frac{5}{8}$ steel, 160,000 T. S.; weight, 36 tons.¹

This is the present fashion of boilers; but the styles are continually changing.

The foundry business, or the casting of metals, is a pre-historic art, and attained a high development at an early age.

We read in Holy Writ that Hiram of Tyre dug a loam pit, and swept up and cast in brass, two columns twenty-seven feet long by six feet in diameter, with a separate base and capital for ornaments.

These pillars were set up in front of the great Temple at Jerusalem, and were probably used as safes in which to deposit valuables to guard against destruction by fire. Such castings would be considered a difficult job to-day. In America the Mexicans and Peruvians cast gold, silver and brass; very fine specimens of their work are extant. The first foundry in the State was started in connection with the first machine-shop in Detroit before 1833.

¹ John McGregor & Sons.

They are numbered by hundreds, large and small, and are scattered all over the State. One in Detroit casts 264 tons of iron a day, and another employs 600 men under one roof. The largest castings ever made in the State, were three shells for steel converters, which weighed over thirteen tons each. In answer to an inquiry about large castings, I received an answer which I quote: "The heaviest casting we have ever made was for a twelve-inch rifle, and the rough casting was 123 tons weight. I do not think as heavy a casting as this has ever been *handled* anywhere; although it is likely that foundations for steam-hammers may have been cast even of greater weight, by setting up cupola furnaces around a circle and leading the molten iron to a mould in the center, and the casting not moved afterward."¹

The first iron casting made in America, was in 1645 by John Jenks of Lynn, Massachusetts. It was a small iron pot, capable of containing a quart. It has been preserved as an heir-loom by his descendants. The twelve-inch gun, before mentioned, was finished as a breech-loader, being thirty-six feet over all, lined with steel for sixty-nine inches of its length, and weighed, when finished, fifty-four tons; about half of the original casting having been turned into chips. It threw a projectile weighing 800 pounds, as well as Krupp's steel guns, of the same size. It took ten months and twenty-five days to finish it.²

THE BLACKSMITH.

The blacksmith's trade is also prehistoric, though not so universal as the casting of brass. South of the Great Desert, Africa had no stone age, but the rude cupolas for smelting iron ore are now seen as fossils in the rocks. The negro blacksmith, sitting before his hut, smelts his own iron from the ore, converts it into steel and fashions it into edge-tools as good as any made by civilized man. King Solomon placed the blacksmith higher than any other tradesman, for all of them, on being asked, "Who makes your tools?" answered, "The blacksmith." But when he asked the blacksmith, "Who makes your tools?" got for a reply: "I make them myself." Till within four hundred years, wrought-iron and steel were the only form of the metal known; for iron

¹ Wm. Hunt, South Boston Iron Works.

² Report of the Chief of Ordnance, 1885.

was first cast in moulds in France in the fifteenth century. The first notable forging made in the United States, was the chain stretched across the Hudson river at West Point, to prevent the passage of the British ships, in the revolutionary war. The links were two feet long, and formed of two and one-half inch square iron, the chain weighed 180 tons. The largest forgings ever made in America were the main shafts of the Sound Steamer "Pilgrim." They were $39\frac{1}{2}$ feet long and $38\frac{1}{4}$ inches in diameter at the largest, and 26 inches at the smallest part, and each weighed 81,200 pounds. It took twenty men fourteen days to forge one of them, with the help of one of the largest steam-hammers in America. The largest steam-hammer in the States is in Pittsburg. Its anvil-block is eleven feet high, eight by ten at the base and six by four at the top; it weighs 160 tons. It was cast from five cupolas set up for the purpose. The steam cylinder is forty-inch bore, by nine feet stroke; and the force of the blow is ninety-seven tons. Who can tell who was the first blacksmith in the State? Wherever men are gathered together, there is always heard the roaring of the bellows, and the ring of the hammer on the anvil. Virgil describes the rhythm of the alternate fall of the sledges; and no doubt, Tubal Cain sent up the same music, as he struck a blow between each one given by his sledgemen; and now the horse-shoer is established at every cross-road.

In old times blacksmiths were supposed to have dealings with the evil one; but now they are only famous for their power over the female sex; for blacksmiths are alleged to always be able to obtain handsome wives. I have seen the hammersman of one of the largest steam-hammers hold hickory-nuts between his fingers and let his helper crack them with the ponderous hammer, capable of striking a blow of forty tons. It required more nerve, and more faith in the skill of a man than I shall ever have.

The first large forge using steam power in Michigan, was started in Hamtramck, by John Ford about 1860. They had several steam hammers, and made car axles and heavy forgings up to twelve inches in diameter; it burnt down about five years ago.

The only steam forge in the State is at Springwells, though there are steam hammers in many of the machine shops.

This concern runs two trains of rolls, using a large steam

engine and three steam hammers ; the largest has a twenty-inch piston, four-feet stroke, moving a three-ton hammer. They make large shafting, and job work ; but their specialty is car work and axles, of which they turn out 100 a day, or 5,700 tons a day.

THE DRAUGHTSMAN.

But there is one branch of the machine shop business that has never changed. It was practiced by the unknown architect that built the Caaba, at Mecca, the great city of Thebes, the Palace of Nineveh, the Hanging Gardens of Babylon, and hewed out the Rock Temples of India. It was used in building the Acropolis at Athens, the Coliseum at Rome, the Alhambra in Spain, the ancient buildings at Uxmal and Palenque, in Central America, and all the great cathedrals of Europe. Without it the great bridges, steamships, water-works, light-houses, and machinery, or any of the great works of modern times, would have been impossible. It was practiced by Noah, by Hiram, the widow's son of the tribe of Naphtali, by Archimedes, Michael Angelo, Stevenson, Naysmith, Erricson, and by the machinist of to-day. All the great works and inventions have to pass through the hands of the draughtsman, who, with his rule, square and compasses, leans over the tressel-board, and puts the thoughts and inventions of the great masters into practical shape. He is a relic of pre-historic times, and his trade has never, and will never, change.

From the time man conceived the idea of building, he must have had the means of measuring, striking circles, and laying out a square. And as long as civilization exists, there will be a draughtsman among men.

In regard to the various text-books and ready-reckoners used by the profession, a reverend gentleman remarked : "The best proof we have, that the world has existed more than 5,000 years is, that Haswell has been written ; for the facts in the book could not have been accumulated in that time." ¹

THE STEAM ENGINE.

As far as the main principles are concerned, the steam engine was perfected more than fifty years ago ; beginning with the use of steam at atmospheric pressure, and only using the differ-

¹ Dr. Hill, Waltham, Mass.

ence between that and the vacuum. The old engineers began strengthening their boilers and carrying more and more pressure. Condensing, high-pressure and compound engines, and even steam over 500 pounds to the inch, was experimented with before 1836. The line of expansion of the steam cylinder was determined; and all the great principles were discovered before that date. Cut-off valves and the drop cut were tried; and we have been repeating their experiments, and re-inventing their inventions. But for all that, we build a much better and more economical engine than before.

It is now possible to get castings and forgings of any desired weight; and builders' failures are avoided, and merits imitated or improved upon. One great improvement is in substituting iron for wood in bed-frames and connecting-rods, and wrought-iron in place of castings for shafting, walking-beams, cranks, etc.

But more advance has been made in the boiler, by being able to obtain larger and better sheets of iron, and the using of steel in the place of iron. We are using much more pressure of steam on our boilers. Fifty years ago, sixty pounds to the inch was thought to be high pressure; but now one hundred pounds is in general use; and on locomotives and river steamboats, where the water is too sandy for the use of tubular boilers, one hundred and fifty to two hundred pounds is safely used.

The new appliances that have come into use within fifty years in the use of steam engines, are, the steam gauge, injector, and last, but not least, the exhaust injector, first used in 1883 in Europe, and but just introduced into America. It uses the exhaust, which is a waste production, for forcing water into the boiler, which water it heats nearly to boiling point.

FORMS OF THE STEAM ENGINE.

In Leghorn, Italy, dredging machines may still be seen, cleaning out the harbor, worked by eight men, who climb up a large wheel, and scoop up a few feet of mud an hour. The modern steam dredging machine will excavate three yards of sand at a haul, and make two scoops in a minute.

Steam shovelers make cuts for railroads, level hills for filling up arms of the sea, and raising the land for cities. Rock-drills are worked from scows, in twenty feet of water; deepening channels for navigation through solid rock. The revolving diamond

drill is used to prove up the country for mining purposes, to great depths; and the rock-drill, driven by a piston supplied with air, compressed to 300 pounds to the inch, have made the great tunnels of the world a possibility, as the air used for drilling will support life, and takes the place of the deadly gases formed by explosives used in blasting the rock. Within twenty years power passenger elevators have become a necessity in large cities, where the value of land makes it necessary to build business blocks to a great height. The common power used in them is a piston, working in a long cylinder, driven by water pressure, the speed being multiplied by pulleys. They are supplied from a tank on the roof, and the water exhausted into a tank in the cellar, and forced up again by a steam-pump, which works automatically, starting when the tank is empty and stopping when it is full. Of steam pumps there is no end; great factories are making them of all sizes, and for every purpose. They vary from one that discharges fifteen gallons a minute, to such ponderous machinery as those that supply Detroit with water; the weight of the metal work of which is 420 tons. I quote from an account of the first trial of a pile driver: "The pile-driving machine men gave me a challenge to vie with them in driving a pile. At a given signal we started together. I let on steam, and in four and a half minutes my pile was driven. It took them twelve hours to drive their pile." But giving the different forms in which steam engines have been built, or the different uses to which they have been put, would be like writing a dictionary, "Their *name* is legion."

Given a force moving in any shape, and it is easy to get it to drive anything; and we have contrived to put the force of steam into every conceivable shape. But it all comes to this: how much coal does it take to move a piston so far in a minute, against a certain pressure?

With the engines and boilers in use fifty years ago, there is no doubt that the average consumption of coal was as high as ten pounds an hour. Even now most engines consume half that quantity, few burning less than four pounds of coal to the indicated horsepower, an hour. In very large machines and pumping engines, where the work is constant, this result has been improved upon; but till the compound engine came into use, few could honestly claim much better results as a yearly average. I have before me the record of a week's trial, which is the best that has been

accomplished as far as I can find out, by a land engine, compound, steam jacketed, horizontal, tandem engine, with receiver, cylinders 20x36, 72-inch stroke, steam 125 pounds to the inch, 57 revolutions, ashes weighed back; result 1.65 lbs. coal an hour to one indicated horse-power. "Our pumping engines which have been in constant use, are doing equally as well, taking a whole year's work. The coal used during the test was of good Lackawanna, egg size."¹

I have the result of a lake boat, fore and aft compound, 27 x 42 in. cylinder; taking all the coal bought in three years, including that used in banking fires and moving boat and hoisting cargo in port, heating and pumping bilge-water; the time of running being between dock and dock; the average coal being 2.50 lbs. a horse-power per hour, which is the best I can find on the lakes.

The coal used costs \$2.00 a ton; therefore the expense of a one-horse-power an hour with soft coal on the boat was \$0.0025. The expense of the land engine, with hard coal at \$4.00, is \$0.0043. In either case, there has been a great improvement in cost in fifty years, as then we used four times as much coal per horse-power as we do now; and it is claimed that ocean steamers with three cylinders compounded, get as low as one and a quarter lbs. of coal per hour, for a horse-power.²

IRON SHIP-BUILDING.

The first iron vessel was launched 1817; and is still in existence. But not till 1832 did the work seriously begin. The first iron steamer to cross the Atlantic, was the "Great Britain" in 1843. The first iron steam vessel on the lakes was the U. S. steamer "Michigan." The materials of this vessel were got out at Pittsburgh, and put together at Erie, in 1840. She has been in commission ever since, and has performed the duties on her station well. She was built of light iron, none of her plates being over five-sixteenths of an inch thick. When rendering aid to vessels in distress, she has often been ashore; and yet, after forty-two years of constant wear, she appears to be as good as when first built."³ The propeller Merchant, by Bell, of Buffalo, built in 1862, was the first iron vessel built on the upper lakes. Twenty-three more were built within the next ten years, and the work has

¹ Corliss Steam Engine Works.

² Sec'y Farwell.

³ David Bell, Buffalo.

been going on ever since, in Buffalo, Cleveland, and Wyandotte. The keel has just been laid for the largest on the lakes. Length, three hundred and twenty-two feet; beam, forty feet; moulded, twenty-six feet; tri-cylinder compound, one thirty-six high steam and two fifty-one inch low steam, forty-eight inch stroke; three boilers thirteen feet diameter by eleven feet long. The engines are amid-ship, ocean steamer style, this being a great innovation on the former custom. Iron seems almost indestructible in fresh water vessels, if they are kept off the bottom, and painted every few years; and therefore must soon entirely supersede wood in ship-building.

BRIDGES.

As we travel over our railroads, we look with wonder not unmixed with fear, at the great bridges spanning wide rivers and deep gorges, and feel a relief when the train has safely passed the apparent danger.

As you look over the "two iron lines that lay between you and destruction, you appreciate the Mohammedan fable of the Bridge Herat: thinner than a hair, sharper than the edge of a scimitar, which stretches over hell and leads to Paradise."¹

But the danger is very slight, as there is hardly an instance of a bridge giving way under the weight of a train of cars; but two great bridges have been wrecked by the force of the winds.

The increasing weight of locomotives and trains has made the structures of twenty years ago too light for the present traffic; and, with hardly an exception, they have all been rebuilt or very much strengthened within that time. I quote from a letter from one of the great bridge builders:

"The use of iron and steel in the construction of bridges is practically limited wholly to the last fifty years. A few experimental structures were built earlier; but the art may fairly be said to have been born and to have grown to maturity during that time. Nothing could be better than stone arches that our forefathers built, and in suitable locations that design is still adopted; but the advent of railroads and the immense increase of highways made imperative demand for larger, higher, longer and less costly spans, and the engineer was prompt to meet it. The modern truss bridge is as far in advance of the stone arch as the railroad train of the farmer's cart.

¹ Theodore Higginson, *Atlantic Monthly*.

The mastery of the abstruse and complex mathematical science of stresses, and the careful and intelligent study of the qualities and capacities of materials, have rendered easy the construction of bridges that would have been simply impossible fifty years ago.

The art of sub-marine founding is advanced to a high degree. Massive piers are by the pneumatic process safely and easily carried down through great depths of water and quicksand, and silt and mud, to a solid bearing on the bed-rock, and the superstructure placed thereon is not uncommonly in spans of from 300 to 500 feet. There are exceptional cases, when the peculiar circumstances require much larger stretches. The Brooklyn Bridge is 1,600 feet long between the piers, and the bridge now being built across the Forth at Scotland will have clear spans of 1,700 feet."¹

The State of Michigan has contributed her share to the advancement in this department of engineering. For one of her great iron works, during the twenty-three years of its existence, has designed and built a great number of such structures, including some of the largest bridges in the country."²

SAW-MILES.

When the last census was taken, in 1880, there were in Michigan 3,581 manufacturing establishments, using power from 1,746 water-wheels, 3,085 steam engines, 4,109 boilers, developing 164,747 horse-power. Seventeen hundred and fifty-three of these were saw-mills or sash and blind works, 706 were grist mills, and 21 were paper mills. Wood working used more than half the power, or 93,623 horse-power, running 441 water-wheels, and 1,670 steam engines, it being by far the most prominent industry in the State.³

The first power used in Michigan drove a grist-mill built in 1701, in Cadillac's time, and called the Governor's mill. It was in Detroit, on what was once May's Creek, now the Tenth street sewer, at the site of Sutton's pail factory. And in 1820 there was one on Bloody Run. In 1822 oxen were used to drive a woolen mill on Randolph street, by French & Eldridge; and as late as 1833 there was an ox-power grist mill in Detroit.⁴ Fifty years ago there were several saw and grist mills, running by wind and water, at Detroit, Saginaw, Ypsilanti, and Mount Clemens.⁵ The first steam engine was at the site of the Detroit water-works, in

¹ Willard Pope.

² Detroit Bridge and Iron Works.

³ Detroit Tribune.

⁴ United States Census, 1880.

⁵ Mr. Dolson.

1827, and used by Peter Van Avery for running a grist mill and distillery; the second was at the machine shop at foot of Cass street;¹ the third drove the water-works; and in 1834 Justin Rice built the first steam saw-mill in the State, which was bought by Buckminster Wight, who, with his descendants, have occupied the same location for sawing lumber, till within a few years. It was a small concern, running one muley saw, with a ten-inch cylinder engine; and it was the only steam saw-mill in the Territory fifty years ago. This was the pioneer of the great army of saws that have cut their way into the wilderness of Michigan; their track being followed up by clearings, farms, settlements, villages and cities. The level surface of the State furnishes few streams with fall enough to run water-wheels; and little could have been done toward clearing up the forest till streams came to the aid of man.²

The water saw-mills were weak affairs; one built at Grand Blanc in 1829, would cut only 2,500 feet a day; the largest of them could not turn out over 4,000 feet of lumber. Compare this with the mills of to-day.³

MODERN SAW-MILLS.

The modern saw-mill is the most perfect devourer of the forest ever known; the largest mills cutting 55,000,000 feet of lumber a year; and as the average of pine to the acre is about 10,000 feet, one year's work will clear 5,500 acres. At that rate our pine will soon be exhausted; and fifty years hence the sound of the exhaust of the saw-mill engine may be heard on the shores of Hudson Bay, clearing away the forest south of the Barren Lands; frightening the reindeer, musk-ox and polar bear. To do this work, they use an engine 30 by 36 and a double engine 20 by 24 and eight boilers 60 inches by 16 feet, running two circular saws and a gang, with edgers, lath-mill, etc.⁴

The logs are brought into the mill from the boom, up an inclined plane, by an endless chain. If they are large logs, about 1,500 are brought up in a day; if small, they use up from 1,800 to 2,000. As the logs pass from the chain, they are thrown right or left to the circulars which cut off the slabs and square the log ready for the gang, which has from forty to fifty saws, through

¹ Patrick Keveney.

² L. Tinker.

³ Stanley Wight.

⁴ Green Pack.

which the timber passes and comes out lumber at the other end. The lumber is carried to the edgers, cut to width, and passed along by a series of rollers and deposited on cars, ready for shipment. No human labor is required, except to manage the machinery. It is a sight to be remembered, to see a great mill in action, using up three logs a minute, and turning them into lumber, lath, staves and heading; for in addition to the lumber, they manufacture from the slabs 14,000,000 lath, and barrel-stuff enough to barrel 60,000 barrels of salt which they boil down from brine, by the exhaust steam and refuse fuel. On a trial of the capacity of this mill, under the most favorable circumstances, they cut 454,000 feet of one and one-quarter lumber in ten hours and forty seconds. And in a test of hauling logs on a sled, two horses drew 30,180 feet of logs at one load, one and one-quarter miles.¹

More than half the power used in the United States is employed in working wood and grinding grain.²

The stave mill is also constantly at work on our hardwood timber, gleaning after the saw-mill; and we may say of our forests: What the locust has spared, the canker-worm hath eaten.

The United States Commissioner of Agriculture in 1883 estimated the uncut pine in Michigan, at 35,000,000,000 feet, which, at the then rate of consumption, would be exhausted in ten years. This State is the greatest lumber producing State in the Union, turning out one-fifth of the lumber in the United States. Last year we manufactured 3,471,460,501 feet of lumber, board measure; 8,555,251,750 shingles; 295,946,015 laths; besides a quantity of staves and heading.³

But we must not think that skimming off the first cut of the white pine will finish up the forests of the State. Trees are still growing, in much of the lumbered lands, which, if kept from cattle and fire, will prove a supply for years to come, and scattered through all the older settled portions of the State, patches of growing woods are left, on most of the farms, which, with proper care, and the increasing use of coal for fuel, will furnish much lumber for our future needs.

¹ L. Tinker. ² Patrick Kevaney. ³ United States Commissioner of Agriculture.

SALT.

The making of salt, which is directly connected with the saw-mill interest, has grown up since 1860 to gigantic proportions; for, at that time, all the salt used in Michigan was imported from New York off the seaboard. In 1879 the State produced almost half the salt made in the United States, making over 2,000,000 barrels. Since that date we have increased our product about one-half, having made in 1885, 3,297,480 barrels. Fifty years ago, the sea-coast was lined with salt blocks for making solar salt; sea water being pumped up by wind-mills and evaporated by the sun. This process would do when salt could be sold for \$1.00 a bushel; but now this industry is practically abandoned, as in 1879 only 9,577 bushels of salt was produced from sea water from the Atlantic ocean; some little still being made in rainless California. Twenty years ago it was (and in many places in Michigan it still is) a great problem how to dispose of the waste from saw-mills. It cumbered the land, filled up the lakes and rivers. In most places it was necessary to burn it, which was done at great expense and risk, either by building tall stacks of fire-brick and sheet-iron, into which the surplus saw-dust and slabs were conveyed on an endless chain; or by forming a "Gehenna" at some distance from the mill, to which the waste was hauled by horses; the fires of which were never quenched, the smoke from the burning darkening the air and making navigation dangerous.

But the question was solved in the saw-mills that were on the great salt-basin. Large nests of boilers were set up for running the engines, and in front of them was made a dumping-ground for all refuse of the mill, covered and surrounded by cylinder boilers, which were connected to the main nest of the tubular boilers. The exhaust steam from the engines and all surplus steam from the waste fuel was used for evaporating the salt water pumped from the wells; and the once waste product was utilized and the expense of taking care of it saved. So great has been the saving that a barrel of salt which cost \$3.00 fifty years ago, has been sold for 75 cents. Of course, this state of things can't always last. When our lumber is finished, we shall have to go back to using coal for boiling our salt, and compete on equal terms with Syracuse, in the market. The *Buffalo Gazette* for 1825 quotes salt at \$3.00 a barrel.

MINING ENGINES.

I have before me a photograph of Watts' first engine, which was used for pumping a mine at Oldham. It is a cylinder about 24 inches diameter by 8-foot stroke. The piston is connected to a "wolving bob," by two chains running over a segment of a circle. Also a drawing of a 6-inch engine, used in starting one of the largest mines in the Lake Superior country. I give a list of the engines now in use at the Calumet and Hecla mine:

Compound,	17 in. high steam,	36 in. low steam,	5 ft. stroke.
"	23	" 38	" 5
"	12	" 24	" 4½
"	12	" 24	" 4½
"	28	" 48	" 6
"	40	" 70	" 6
High Pressure	30		4
"	40		5
"	48		3
"	30		6
"	28		4
"	14		2
"	18		4

And three small engines, size not given—sixteen in all—to 180 feet area of one cylinder, 138 inches diameter. They have also two steam-hammers for breaking rock, five steam stamps and five 20-ton locomotives.¹

BREAD.

The raising of grain and preparing it for food is the first necessity of civilized man, and the improvement wrought in this by the mechanical arts, has kept pace with the progress in other directions. In some parts of the United States the soil is still scratched with a pointed stick, drawn by oxen harnessed by the horns, the grain sown broadcast by hand, the crop reaped with a sickle, trodden out by oxen, and winnowed by the wind. Maize is shelled on a shovel, hulled and softened by boiling in lye-water, pulverized with a stone roller, on a matate and baked on a heated stone, requiring the constant labor of one or two women to supply a family with their daily bread, or rather, with their daily tortil-

¹ Engineering and Mining Journal, July 12, 1881.

las. The modern plow is of steel or chilled iron, and is harder than the nether mill-stone and polished like a mirror.

The grain is sown with a drilling-machine, drawn by a horse, which digs the hole, drops the seed, and covers it up. The hoeing is done by horse-cultivators, and the crop is garnered by a machine, drawn by two horses, which reaps, bundles, and binds the straw ready for threshing and winnowing. This is done by an immense machine, driven by a steam engine, which bags the clean grain and stacks the straw.

The wheat is drawn to the railroad, where it is loaded by steam into cars, and carried to the large elevator, which is an immense building, capable of storing millions of bushels. Here it is raised by an endless chain of scoops, into bins, from which it is weighed, shot out into vessels or cars, and transported to the ends of the earth. Steam-shovelers unload the cars, and steam elevators unload the vessels, and raise the wheat into the mill, to be ground into flour. It is ground, bolted, and barreled, by power, and is kneaded, rolled, and cut into shape by machines, and baked in a revolving oven. It is never touched by human hands until it is ready for eating.

CRACKERS.

Machine bread and cracker making are largely practiced in the State. I quote from a letter from the largest and oldest concern:

"I am unable to state the exact time the cracker business was first established, that is, the old system of hand work; probably before the birth of this State. The first steam cracker bakery was established about 1861; and at that time ten bbls. of flour was considered a big day's work, and required about seven hands. We now have a building 95 by 80, employ 38 hands, 12 machines, 60 horse-power engine. We manufacture 18,000 bbls. of flour into 40 different kinds of goods, also 1,200 tierces of lard, several carloads of sugar, and 300 bbls. of molasses."¹

Other establishments use power in making soft bread, which is delivered hot to customers.

GRIST MILLS—FLOUR.

The two women grinding at the mill, mentioned in Scripture, must have been about the earliest method of pulverizing grain.

The oldest use of power on record was for driving a grist mill,

¹ Vail & Crane Cracker Co., Detroit.

as water-wheels were in use for this purpose over 1,800 years ago. Ox, wind and water grist mills were common in Michigan long before the State was admitted into the Union; and the first use of steam there was for grinding grain. These mills and all others in America, till about ten years ago, used the upper mill-stone, revolving above the nether. But now the whole system is abandoned, and all wheat is now pulverized by chilled iron rollers, which, with the help of the middlings purifier, make better flour than was ever possible with the old process. In the modern mills, the wheat goes over and over again, from the top of the mill to the bottom, passing from one set of rollers to another, but "from the time the grain comes into the mill in cars, to the packing up of the fine flour in barrels, through all the processes of sifting, cleaning, grinding, purifying, separating, etc., everything is automatic. No workman touches the product save in the way of supervision."¹

The great flouring mills at Minneapolis consumed last year 24,000,000 bushels of wheat, and made 5,450,163 barrels of flour. The largest flour-mill in Michigan is driven by a compound engine, making 750 barrels of flour, by the use of 325 horse-power, daily.²

SUGAR MAKING.

The making of sugar, which was formerly confined to the tropics, is, by the aid of modern invention and machinery, now practiced in the temperate zone, and the cost of it very much decreased by the competition of sorghum and beets to the sugar-cane.

I have seen the negro slave at his unrequited toil; and as he is a thing of the past in this country, and must soon be extinct among civilized men, I take the liberty of describing how he cut and ground the cane, and made sugar, without the aid of steam machinery, working eighteen hours a day in crop-time without a Sunday, under the lash of the mayoral, in Cuba. The cane was cut by a gang of negro men and women, with rude swords, and heaped in great piles near the mill, which was three wooden rollers connected to long wooden sweeps. To these many teams of oxen, yoked by the horns, were fastened, and as they traveled in a circle, the cane was crushed between the rollers, and the sweet

¹ Detroit City Mills.

² Century Magazine, May, 1886.

juice ran in a trough to the boiling house, and there boiled in a train of four kettles, set in brick-work, heated by the refuse cane which was spread out to dry after leaving the rolls.

When the cane juice was boiled down to the sugar point, it was dipped out into coolers; after cooling and crystallizing, it was set to purge in long tapering tin cans, with a small hole in the bottom end, treated with a layer of damp clay on the top, and the result was the hard white sugar, which some of us remember as done up in thick blue paper. The drippings from the pans, was the West India molasses, from which the Medford rum of our fathers was made.

The steam sugar works of 1853, which is now in use, had for a mill three iron rollers, two and a half feet in diameter and six feet long, geared together by pinions; driven by a twenty-inch engine, geared to the rolls twenty to one, by massive gears. The cane was brought to the mill and the begass taken away, by endless tables. Boiling down the cane juice was done by exhaust steam from the engines, in large vacuum pans, very much below atmospheric pressure.

When partly boiled down, it was leached through high vats, filled with animal charcoal, for clarification; then reboiled to the sugar point, cooled and revolved at a high rate of speed in centrifugals which separated the molasses from the sugar. The use of steam made sugar-cane culture possible in the southern States; as now the grinding can be finished before the first frost, which ruins the cane for sugar. The French revolution was the cause of one great good to the world, as the blockade of European ports by the English, deprived the people of sugar, and turned their attention to providing a substitute; so now, sugar made from beets has largely taken the place of foreign sugars in Europe; and several of the States now manufacture it in large quantities.

The United States Department of Agriculture publish plates of a mill in France, which works up 1,000 tons of beets in a day. In one room there are six steam engines, five vacuum pans, and endless other machinery; and in another building, there is a large cutting-mill and twelve batteries, making a mass of machinery seldom seen together. They also publish a description of a mill in California, with a print, shewing a pile of 20,000 tons of beets, ready for the mill. Large appropriations have been made by Congress, to experiment in sugar making from cane, sorghum and

beets ; and the process of manufacture is fast changing, and before long, temperate climates will furnish their own sugar.

Several years ago, there were a number of large establishments started in the United States, for making so-called grape sugar or glucose. Large buildings were erected and filled with expensive machinery. One of these concerns was built in Michigan.

For some reason the business did not pay ; and the machinery has been removed, and the building used for other purposes. And that has been the case with most of them.

CANDY.

In my investigations into the subject of food, I found out what, to me, was an astounding fact ; that there is made and sold in the United States 300 *tons* of candy a day, which is 109,500 *tons* a year.

In the great cities there are large factories devoted to candy-making, using a large amount of steam power.

“ It is a fact, that within the past, quarter of a century, the development of the industry has been very great. The simple wants were easily enough supplied by such appliances as are now long since passed into disuse, or are used only to supplement the more complicated methods. For instance, there was the old-fashioned plan for smooth or pearled work, operated by a man toiling all day long, shaking and moving the pan over a hot fire, turning out, at most, from 100 to 200 pounds a day. Now, we find the revolving steam-pans, a dozen or more in a row, which a man and two helpers easily preside over, turning out anywhere from 2,000 to 3,000 pounds a day, of finely finished goods.”

Twenty-five years ago there were but two candy works in the United States, both in New York city ; but now most of the large cities have one or more. The largest in the State is in Detroit ; employing when in full blast, about 300 hands. It is driven by a fifty horse-power steam engine, which pulverizes the sugar in a mill running at the rate of 3,000 turns a minute, beats up the material for marsh-mallow in enormous egg-beaters, runs a row of twenty-four steam pans, kneads, rolls, cuts out and prints the material for lozenges, turns series of rollers on which are stamped dies, which cut the hard candy into kisses at the rate of bushels a minute ; elevates the sugar and other material from one floor to the other ; in short, it has a hand in every department of the

business. The boilers furnish steam for boiling the stock in great copper kettles capable of cooking from 500 to 800 pounds of stock, heats the steam-pans, warms hollow tables to keep the mass soft while working, heats large drying-rooms in which are stored at once 8,000 trays of moulds, formed of corn-starch of various shapes, filled with material. In short, without steam-heat, modern candy-making would be impossible.

The most striking feature of a candy factory is the pan room, where a dozen or two of these, arranged in a row the whole length of the room, are constantly revolving with a lazy like motion and a deafening sound. These pans are from four to five feet in diameter, made entirely of copper, and revolve on a hollow shaft two or three feet above the floor. Through this hollow shaft, steam passes to a coil of pipes surrounding the pan, and thus the required heat is obtained. Each pan holds from one to two hundred pounds of previously formed drops or some kind of nut kernel. Melted sugar is put on the revolving contents, which, with the heat of the pan, soon hardens to the surface in a smooth coating ready for a repetition of the dose. Flavor is applied either in the original drop or in the sugar added. Lastly, when the required size and fineness of finish are obtained, color in a liquid form is applied. This is mostly carmine, as nearly all these goods that are colored at all are red. After the goods have been thoroughly dried they are put in the waxing pan, which gives them a fine glossy finish.

We now manufacture the finest qualities of candy, which a few years ago were all imported from Paris. Any new style got up anywhere is immediately duplicated here. There are five factories in Michigan; four in Detroit and one in Grand Rapids; three use steam only, and two are run by steam engines; the product of the largest is from eight to ten tons a day; and about twenty tons a day are made in Detroit.

One of the most prominent candymakers said: "It is a singular fact that \$33,000,000 are spent in America for something that is of no use to anyone."¹

TOBACCO.

Detroit is a great tobacco manufacturing centre, and its prominence is comparatively recent. But long ago, when the Jesuit

¹ Gray, Toynton & Fox.

missionaries first settled amongst the Hurons, they found the tobacco trade flourishing in our immediate neighborhood. A branch of the Huron tribe was called the Tobacco Indians, and lived on the other side of the river, along the banks, from the southern shore of Lake Huron to Lake Erie. These aborigines cultivated the weed and prepared it for market, being the only instance of the North American savage east of the Rocky Mountains engaging in any traffic or raising a crop for sale. When the Hurons were exterminated by the fierce Iroquois, these Indians were spared, and their name is perpetuated in the town of Wyandotte. Tobacco is one of the good gifts that America gave the rest of the world. It must fill a great want of mankind, for in less than two hundred years after it was first introduced into Europe, it was used by every nation and tribe on the whole earth. The highest civilization and the lowest barbarism unite in the use of this much abused weed. The maledictions of Kings, Popes and Emperors did not hinder its progress. It is the one habit that conquered the world. I have no means of finding out how much is used in the world, but in the United States the figures are sufficiently high.

In 1884 there was manufactured in the States, 195,439,604 pounds of plug tobacco; 16,579,882 pounds of fine cut; 45,172,734 pounds of smoking; 6,127,230 pounds of snuff; 76,533,371 pounds of material used in cigars and cigarettes; total, 252,852,825 pounds, or 126,426 tons. We have also manufactured, 3,372,982,036 cigars and 920,303,519 cigarettes, a total of 4,293,285,547.

With the help of our foreign neighbors, to whom we exported 83 tons, we have smoked and snuffed 65,416 tons, and chewed 61,040 tons of tobacco of our own make. We are increasing in its use, for in 1863 we only made 29,000,000 pounds. In 1885 we made 6.2 times as much, or 180,700,000 of smoking and chewing tobacco alone.

Fifty years ago we purchased our tobacco in the form of plug or "pig-tail." It was hard, and required much exertion of the jaws to masticate it. The old conundrum, "Why do you chew tobacco?" The answer being: "To get the juice out;" would hardly be appreciated by the consumers of the fine-cuts of to-day. To get a pipeful ready for the pipe was a long job. It had to be shaved fine with a jack-knife, and rolled for a long time in

the palms of the hands; and even then it required lighting and re-lighting many times before it was consumed. The old grandmother of the period kept scooping up hot ashes with her pipe, from between the andirons and getting a whiff or two before she had to repeat the operation. I acknowledge the smoke was good when it was obtained "as no tobacco is really bad, though some is much better than others;" and the old fashioned plug certainly had the real seductive poison, all in it, which went just to the right place. This went on till some genius appreciating this great waste of human muscle, conceived the idea of cutting and shredding tobacco, by the power of steam, thus reducing it to a convenient form for human use. The idea took at once; and now the great factories and palatial mansions around Detroit, show how well their labors are appreciated in America, and throughout the civilized world. In 1842, George Miller commenced cutting tobacco at Detroit, in a small building on Woodward avenue, south of Jefferson. The power was a horse, which traveled round a sweep in the cellar.

There were no other works of the kind east of the Hudson river. He used a Rodgers machine, the stock being pressed into a cheese ten inches square and two feet long, and fed up to the revolving knives by screws. From this small beginning started this great industry of Michigan; the founders of the five great factories in Detroit being all employed at these works. They are the only tobacco cutters in the State, and make over one-eighth of the fine-cut, and nearly one-tenth of the smoking tobacco in the United States, using large steam engines, and the cutting tools so contrived that it is not necessary to press the stock before cutting. They turn out 7,474,916 pounds of manufactured tobacco a year.

DRINKS.

Fifty years ago the prevailing beverage for an intoxicant was New England rum, made from the sugar cane. This has been superseded by the extract of our own maize, called whisky. Much wine was imported and some ale. There were a few breweries, which made strong beer. The farmers' wives brewed a decoction of roots and herbs, more or less palatable, and small beer was for sale in the cities, in heavy stone bottles. These weak drinks have been replaced by pop, and soda-water, so-called, because there is no soda in it. But all these beverages are fast

being driven out by lager beer, which is of German parentage, but taken kindly to, by the average American citizen. If you get high enough to overlook a Western city, you see two classes of buildings towering over the rest, in about equal numbers; one set are school-houses, and the others lager beer breweries. The business is not forty years old, for the first lager beer in Michigan was made in 1850, by Henry Miller, of Detroit; and now there are in Michigan 110 breweries, making 442,500 barrels a year.

There are in the United States, 2,002. If they made as much beer, in proportion to those of this State, they would produce 8,853,500 barrels, or enough to supply the pumps of the Detroit water-works nine and one-half days, or ten gallons to every man, woman and child in the United States.

One brewery in Detroit has a capacity of 60,000 barrels a year, using two steam engines of fifty horse-power, for grinding malt, stirring the mash, and elevating material; also, three steam pumps, and two one hundred and fifty horse-power boilers for running the engines and furnishing steam for boiling the mash. They turn malt, rice, and hops into lager beer and other seductive beverages. The percentage of alcohol in this beer is four per cent. It is kept six months in cooling rooms at a temperature of thirty-three, before it is ready for use. Their stock on hand in March was 14,000 barrels of lager, and they use ten tons of ice a day.

But for all this great increase in the use of lager, it is said there is still some whisky consumed in Michigan; though there is no distillery within her borders; but over the line there is plenty of them "that are driven by the diabolical power of steam, and with an energy that knows no Sunday."

ELECTRICITY.

The terrible power of lightning finds a place in the earliest myths, and crops out in mythology; the thunderbolts of Jove, Thor's hammer, the rock-breaker, are types of Supreme power.

In 1754 Franklin "seized the lightning from heaven," and found out something of its nature, and showed how our houses could be protected from its power. But it remained a scientific toy for over an hundred years; but now it is degraded to household drudgery, going our errands, calling our servants to answer the door-bell, and polishing our stoves. In 1837 the first message

was sent over a wire, and the electric telegraph soon became a household word. It was immediately adopted all over the world; and now there is no spot inhabited by civilized man where he is not in instantaneous communication with his fellow men. The wires run over mountains and under the oceans, from the Arctic Circle to the Equator.

There are in the United States 162,000 miles of telegraph poles; 599,000 miles of telegraph wire; 15,600 telegraph stations. There were sent last year 46,300,000 messages, not counting those on railroad business.

There are in Michigan 5,300 miles of poles; 11,900 miles of wire; 539 telegraph stations. There are in use 1,000 instruments in the State.¹

Ten years ago an electric light was one of the curiosities of the Centennial Exhibition at Philadelphia. Now several cities in Michigan use it for street lighting. In Detroit they use the arc light, or the spark between carbon points, set up on towers from 100 to 150 feet high, which beautifully illuminate the roofs of our houses. For household use the incandescent light is being introduced. It is a wire of carbon in a vacuum formed in a glass globe, and made candescent by the passage of a current of electricity.

Electricity is used as a means of distributing power through wire; and railroad cars have been run in this way; but at present no economical and practical result has been obtained. The current of electricity is excited by magnets revolving at great speed between other stationary magnets, driven by steam engines, so the result is turning power into light. One horse-power is required to furnish the force to run arc light of an alleged 2,000 candle-power. The best result claimed for coal, oil, and wages of engineer and fireman, in running an electric light plant, is nine-tenths of a cent an hour per horse-power.

The Detroit Electric Light Company use five steam engines, the total capacity of which is 900 horse-power. They supply 400 street tower lights and 300 private customers. They estimate each light at 2,000 candle-power.

Solomon said: "There is nothing new under the sun;" and modern experience has shown he was wise in his generation. Which of our great inventions are really new? The power of steam was

¹ A. P. Roberts, The Bell Telephone Company.

known centuries before the days of Watt; and many steam-boats run before Fulton's time. In Hindostan, there have been no power forges in historic times; but in the Mosque of Delhi, there has been for ages, a wrought-iron shaft, so large that there are but five hammers in America large enough to duplicate it. Even the electric telegraph was foreshadowed in the oldest of books; for we read in Job: "Canst thou send lightnings that they may go and say unto thee, Here we are?"

But as Minerva sprang fully armed from the head of Jove, so appeared the telephone. We waked up one morning and found it full grown; and the sound of its halloo was heard all over the land. I believe no one ever imagined that human speech could possibly ever be heard for miles as distinctly as for feet, before this wonder was evolved.

The wise man of old for once was mistaken. Starting ten years ago, it had in use, January 1st, 1886, 101,734 miles of wire, 134,847 subscribers, and 5,168 employes.

LEAD PIPE.

The process of making lead pipe has been very much improved. The lead was formerly cast in the form of a cylinder about three inches in diameter, with an inch bore and about four feet long; and afterwards rolled to the proper thickness, over a long mandrill. The pipe was very imperfect and could only be produced in short lengths. Now the melted lead is poured into the cylinder and a piston forced down into the melted lead by a hydraulic press at 3,000 pounds to the inch. The semi-fluid lead is forced through an orifice of the proper size around a mandrill, and a continuous lead pipe passes out, and is reeled up finished ready for shipment. This method furnishes perfect pipe in long lengths. The lead in the cylinder is kept at the proper state of fluidity by a steam-jacket supplied with steam from the boiler.

There is but one lead pipe works in the State, which is in Detroit; and by the use of a ten horse-power engine turns out fifty reels of pipe a day, each weighing 180 pounds, which is a yearly output of over 1,350 tons.¹

SHOEMAKING.

We all remember the old-time shoemaker sitting on his low bench, with a small collection of awls and knives, lap-stone, ham-

¹ Edward Morris.

mer and pair of pincers, cutting out from raw leather, and with long-continued labor making a pair of shoes, evolving them out of his head "as it were." There are plenty of cobblers to-day working with a smiliar kit of tools, but they work only at repairing, for boots and shoes are now made by machinery. The first practical pegging machine was built in 1857; and an enterprising shoemaker in Danvers, Mass., concluded to start a power factory. I set up for him a four-inch cylinder and boiler, and put his works in operation, using a three horse-power, with which he run one pegging machine. Within three months he changed for a six-inch engine; three months more it was changed to an eight-inch, and afterwards to a twelve; and the last time I heard, he was running an eighteen-inch engine, which supplied 100 horse-power; and other factories were started, so in a few years hand-shoemaking became a thing of the past. "Over a hundred machines have been invented for shoemaking, changing the whole course of a great industry, and producing great cities."¹ "Through scores of processes, the forty-four pieces of a pair of shoes require, to bring them together, the co-operation of fifty men, women and children. The result is, you can buy for three dollars what would have cost your forefather six."

To do this, there are used sewing machines that make 600 stitches in a minute, pegging machines that make and drive pegs faster than they could be counted; machines for sewing on soles, that increase the product over hand work from 40 to 600 a day, or fifteen times as fast. In 1880 the great factories turned out 125,478,511 pairs of boots and shoes, a little more than two pairs a year, for every man, woman and child in the United States.

The largest shoe factory in Michigan "employs between 600 to 700 hands, makes on an average about 1,500 to 1,800 pairs per day. Some seasons of the year run as high as 2,000 pairs a day."²

BRICK-MAKING.

Brick-making is older than history; and bricks, being indestructible, are found all over the world. In Scripture we find the first written account of an attempted improvement in their manufacture by King Pharaoh, by economizing in straw, thereby causing a strike among his workmen, who went out and never

¹ Harpers' Monthly, January, 1885.

² Pingree & Smith, Detroit.

came back to work, but emigrated to Palestine under Moses. Pressed brick were used when Babylon was building; and had the maker's name stamped upon them. Brick-making then, and till thirty years ago, has been a hand trade; oxen have been used to run a mixer for preparing the clay, and the hog's labor is still utilized in China by sprinkling corn over the wet clay, which by rooting they prepare for use; this being the only instance where the labor of swine has been used by man.

The first brick used in Michigan for building, was in the Gov. Porter House, in Detroit. They were imported from Ohio in canal boats, while Michigan was a territory. The size of the brick was nine inches long, four and five-eighths wide and two and one-quarter thick. The first made in Detroit were made on the Woodbridge farm a short distance north of Woodbridge grove, and the quantity just enough for building chimneys. When the arsenal at Dearborn was built, Titus Dart started a brickyard on his farm on the River Rouge. Abial and William Wood, on the Allen farm, furnished the brick for SS. Peter and Paul church and for the first freight house on the Michigan Central Railroad. In 1848 John Greusel came here from New York, where he had been in the brick business for fifteen years. It was he who first introduced brick machinery into Detroit, or the State of Michigan. All brick before that were made by hand. The quantity of brick made in 1848 was not over 3,000,000; and this was enough to supply the market. Prices were \$3.25 to \$3.50 per 1,000. Since then the brick business has increased to such an extent that at this time there are twenty-nine brickyards near Detroit, all of them using machinery, and most of them using steam power, and, on an average, making 90,000,000 per year, the product being thirty times as great as it was eighteen years ago.¹

STOVES.

In 1836 there were few stoves in use. The crane hung over the kitchen fire place, on which were suspended the pots and kettles.

Meat was roasted suspended by a chain before the fire, and turned by the draft of the chimney, or by a dog-power. A class of short-legged dogs still go by the name of turn-spits.

¹ John Greusel.

Later, a tin-kitchen so-called, was used. This was set before the fire, and the reflection from the bright tin doing part of the cooking, so the meat had only to be turned occasionally in roasting. Biscuits were baked in a cast-iron bake-pan suspended over the fire from the crane, the cover had a high rim all around, to be filled with coals to equalize the heat. Bread was baked in a brick oven, and a set boiler with a fire under it heated the water for washing-day. The rooms were heated by wood burned in open fire-places. What a contrast to heating by the base-burners of to-day, with the mica panes all around to give light to the room, and polished and nickel-plated till they shine like silver, and our six-kettled cook stoves with large ovens and set hot water tanks! In those days a moderate family laid in eighty cords of hard wood. Now the same house is heated and the cooking done by twelve tons of anthracite coal, and much better heated than was possible before.

The making of stoves is one of the great industries of the United States, and Detroit is the largest stove market in America, more stoves being made there than in any other city in the world.

Stove-making in Detroit dates back to the year 1857, when Jeremiah Dwyer started a small foundry at the foot of Lieb street. Shortly afterward a company was formed to increase the manufacture.¹

In 1875, they had 200 men at work, and cast from ten to fifteen tons per day. Now they employ from 1,000 to 1,250 men, and turn out from 225 to 275 stoves per day, a yearly average of between 60,000 and 70,000. There are three stove foundries in Detroit, which employ about 3,000 men, and produce 125,000 to 150,000 stoves per year, consuming from 125,000 to 150,000 tons of pig-iron yearly.

These stoves are the best made anywhere, and are sold in every State in the Union, and many are shipped to foreign countries, and their business increases every year.

HEATING OF BUILDINGS.

There are numerous methods of heating buildings from a single fire. Large furnaces are arranged as near as possible below the middle of the building; fresh air is brought in from the outside,

¹ L. L. Barbour.

and after being warmed by passing over the heated iron, is distributed through openings in the floors, controlled by dampers. Steam boilers are largely used for heating, and the steam carried by pipes to all parts of the building, and taken into radiators of cast-iron or steam pipe, which give out the heat from the steam, and, by a system of small pipes, carry the condensed water back to the boiler by gravitation. This method of heating is reduced to a very perfect system, the pressure being nearly alike on all parts of the building, and very low steam is mostly used, seldom over three pounds to the inch.

The boilers are so arranged that the dampers shut off the draft when the steam reaches the desired amount of pressure, and they open when the pressure fails. Thus the boilers will run for several hours without attention, and no labor is required, except to shovel in the coal and rake down and carry away the ashes.

These boilers are so safe that an explosion of any of the thousands in use has never occurred; though they are often in the charge of inexperienced men or women. The boilers are of every form and material, from the ordinary upright and horizontal tubular wrought-iron boiler, to all forms of cast-iron concerns; for the pressure carried is so low, even that unreliable material has been used without exploding dangerously. Radiators are made in every style, and some are highly ornamental; many are made in the State; one large foundry does nothing but cast one pattern; and many large establishments are entirely devoted to heating buildings by steam. The largest public buildings are heated in this manner, using large nests of tubular boilers. Return-flue boilers are sometimes used, and miles of piping. In some cities a central boiler-house is established, the pipes laid under the streets and the steam carried for miles, for heating buildings and furnishing steam for elevators and other power.

EXTINGUISHING FIRES.

The houses of the United States being mostly built of wood, fires are constantly taking place; and means for extinguishing them by public organizations were early used. These were volunteer associations, each member agreeing to keep at his house, two fire-buckets, a long ladder, axe, bag, and bed-key to be used for fire purposes only. The town meeting appointed a fire-warden who had great power. In case of a fire he could compel by-

standers to work under his orders under a severe penalty for disobedience. When fires took place in the woods, teams of oxen and plows were collected, to run furrows around the burning, and men were stationed along the line with shovels, to dampen the fire with sand to prevent its running through the grass and leaves. The alarm was given by ringing the meeting-house bell, and every good citizen hurried to do his part to extinguish the flames and save property.

Hand-engines without suction-hose were in use in 1836, which were supplied by a string of men passing water from the nearest pump or stream; and lines of boys passed back the empty buckets.

The first improvement was the introduction of suction-hose, to draw water from wells, with long lengths of leading hose to reach the fire. When water was at a distance, two or more engines were stationed in a line, taking water from each other, the last playing upon the fire. Engine companies were formed, and the rivalry between the different organizations in cities can hardly be conceived by the present younger generation. The engines were of the most perfect description, with high-flown names, and as beautiful as paint and pumice-stone could make them; they were manned by from 40 to 100 men, and a race towards a fire was an excitement well remembered by those of you who are now over fifty years old; and the washing of a rival tub was a feat to be long remembered, and led to black eyes and bloody noses. Great riots have taken place, owing to the rivalry between the various companies.

But Siksey has long ago rolled down his pants, and now hardly looks up when the alarm bell strikes the number.¹

The first steam fire engine was built in 1840, in New York; but such was the opposition by the hand-engine companies, that its use had to be abandoned; but in 1855, others were built, and they began to come into use, manned by paid companies. At the close of 1875 there were 1,400 in use. The standard engine of to-day has an upright tubular boiler two feet eight inches in diameter, two steam cylinders from eight to nine inches diameter, pumps from four to five inches, stroke eight inches, capacity in gallons a minute 900, weight 6,500.²

The fire alarm is sent to the central office from signal-boxes

¹ Concord, Mass.

² Hand-book of modern steam fire engines.

placed at the street corners, and bells strike the number of the box by electricity. At the first stroke of the bell, the great horses rush from their stables to their places by the pole, the harnesses drop down upon their backs, the fire is lighted, and the men dress themselves, mount the foot-board, and in thirteen seconds the engine is tearing down the street towards the fire. On arriving at the hydrant, thirty seconds more, and the engine is at work pumping water under a pressure of one hundred pounds to the inch. The men may be all asleep in bed, but if an alarm is given from a box three-quarters of a mile distant, three minutes is sufficient to get the machine at work on the fire.

These machines do effective work, throwing two streams through 900 feet of hose and one and one-eighth nozzles. Then men and horses are all in one building which is never left without men enough to manage the engine at a fire. Chemical engines, so-called, are used, which throw a stream of water highly charged with carbonic-acid gas, the pressure of which drives the water. They are lighted and drawn by fleet horses, so they can gain time on the larger engines; and a few minutes at the commencement of a fire may save a great conflagration. Great extension-ladders are used, mounted on heavy trucks, and raised by cranks, by which the hose can be safely carried to the tops of the highest buildings. Take it all in all, the city fire departments seem to have arrived to a high state of perfection.¹

STREET CARS.

In 1836 there were but fifteen miles of decent inland wagon-road in Michigan, though roads were cut through the woods to Saginaw and Chicago ten years before. This road started from Detroit, and is now the Grand River road. Beyond were only Indian trails, by one of which it was possible to reach Chicago if a man was a good walker or had a horse. Freight could only be carried by packers, pack-horses, or by dog-trains on toboggans, in winter. Roads were very soon cut and worked in all parts of the State, and travel and transportation were carried on in large, covered wagons, drawn by oxen. You can judge of the then condition of the roads by riding out in the spring, off the pavements of our cities. Within thirty years it was the

¹ View of Engine No. 8, Detroit 1.

fashion for ladies to be driven to church in ox-carts in muddy weather, as the streets were impassable by carriages. The first improvement, after the corduroy roads, were the plank roads, with which, to our sorrow, we are well acquainted. Stone pavements were first laid in Detroit about forty years ago, and various styles of wood pavements have since been tried. Twenty years ago the first of the street-car lines were started, which are now in general use in the State. Steam-power has been tried and abandoned on street lines; but in New York elevated roads have been built, on which locomotives are run, and over which millions of passengers are carried at a great speed, long trains of cars following each other every minute. Cable-lines are also in use, an endless wire passing round large drums, driven by steam engines, draw the cars ten miles an hour. Electricity is being experimented with, for driving street-cars, but as yet with doubtful success.¹

IRON.

Iron was known before written history. The book of Job and every Scriptural writing afterward, mentions steel and iron. They were also sung by Homer. Iron clamped together the stones of the Pyramids, and was cased in brass in Assyria, showing it to have been the cheaper metal. Iron is the most universally distributed and the cheapest of metals; but to the savages tribes, to whom it has before been unknown, it is the most valuable commodity on earth. In trading with the inhabitants of the Pacific Islands, by Capt. Cook, the price of fat hogs was a nail each. In 1317 the Scots invaded England and carried off all the iron they could find, as the most valuable plunder. Iron was passed from tribe to tribe in America, long before the knowledge of where it came from was known, for when Mackenzie crossed the continent he found knives in use east of the Rocky Mountains, that had been furnished by the Spaniards on the Pacific Coast, among tribes that had never heard of white men; and iron was buried with the dead, as the greatest sacrifice to their memory. In opening graves in Yucatan, Stevens found a knife, along with stone tools and gold ornaments.

The Romans when they occupied England, built their blast furnaces on the hill tops, the winds furnishing the blast through

¹ L. Tinker.

channels opened to the windward; but water was early used for the purpose. Wood was the only fuel till 1750, and coke came into use in 1842, and in 1880 one-third of all the pig-iron in America is made with that fuel. Thirty years ago the Bessemer process of making steel had not been heard of, and the open-hearth process for the manufacturing of steel had not been made a practical success, or the regenerative gas furnace had not been invented. Fifty years ago the American blast furnace which would make four tons of pig-iron a day, or twenty-three tons a week, was doing good work. It was published as a great thing in 1831, that a furnace was building which would make 1,100 tons of pig-iron in a year. But in 1880 we had one furnace which made 224 tons a day, and 67,179 tons a year.

In 1810 we produced 53,980; in 1840, 315,000; in 1880, 4,500,000 tons of pig-iron. It was not till 1844 that we commenced to roll any other kinds of rails than strap-rails for our railroads. In 1880 we rolled 1,305,212 tons gross of rails, two-thirds of which were steel. In 1880, we made 22 per cent. of the pig-iron and 29 per cent. of the amount of steel made in the world.

There are in the United States 691 blast furnaces for making pig-iron, the capacity of which is 18,600,000 tons, which is enough pig-iron to build four solid pyramids as large as and thirty-two times as heavy as that of Cheops, on which 100,000 men are said to have worked half a century, and which is the largest structure ever raised by human hands.

There are 438 rolling-mills, having 1,555 trains of rolls, 5,265 puddling furnaces and 2,782 heating furnaces; thirty-two nail-mills with 5,762 machines; twenty-two Bessemer steel works running forty-six converters; eighty rail-mills, and several other works for making the finer grades of tools and plate-steel.

Capacity of the rolling-mills.....	7,600,000 tons.
“ of the Bessemer works.....	2,490,000 “
“ of other steel works.....	810,000 “
Total.....	10,900,000 “

If this were drawn in bars 1 by 1½ inches, enough would be made every month to reach around the world ten times, and enough over to stock all the iron stores in Detroit.

One of the greatest achievements of iron machinery is rolling over 233 miles of wire bar every day. I quote: “Our rod-mill

rolls the steel billets into wire rods; we take a four-inch billet from 125 to 200 pounds weight, and at one heat roll it down into a wire rod (five gauge), coiled on a thirty-inch reel, and from 900 to 1,300 feet long.

The regular output of the mill is about eighty tons per day, although it has gone much higher than that, sometimes almost to 100 tons."¹

BLAST FURNACE.

The first great improvement in making cast-iron was in the use of the hot blast, which was invented in England in 1828, and introduced into this country between 1830 and 1840. The first experiments only raised the temperature to 250 degrees, Fahrenheit, and the product of the furnace increased about ten per cent.; later, a hot blast oven, containing cast-iron arched pipes was placed on the top of the stack, and heated by the flame from the tunnel head. By this arrangement the temperature of the blast was raised to 500 degrees, increasing the product about forty per cent. Since 1868 cast-iron stoves of various patterns have been used, raising the temperature of the blast still higher, and causing greater economy in making pig-iron. The regenerative principle of storing heat is the latest improvement in blast furnaces. In this process large masses of fire-brick are heated by the refuse gases from the stack, and when heated the cold blast is turned through the hot passages and heated by taking up the heat stored by the brick while the gas is heating another set of flues. In this way a great heat is obtained for the blast.

STEEL RAILS.

The making of steel rails requires a most extensive collection of machinery. In the large works the iron ore is smelted in from six to eight of the largest blast furnaces, with two regenerating ovens to each; the molten iron being drawn off into ten-ton ladles hung on trunnions on railroad cars; these are drawn by small locomotive engines up to the converters, into which the hot iron is dumped. Air is forced through the metal, at a pressure of twenty-five pounds to the inch, burning out the carbon of the cast-iron. The heat of this combustion raises the temperature to

¹ Oliver & Roberts Wire Company, Pittsburg.

the highest degree known in the arts, and entirely decarbonizes the iron; but as steel has a small percentage of carbon, it is now mixed with about one hundred and twenty pounds of spigle (a highly carbonized iron) to the ton, giving it the proper temper for the rails.

The steel is drawn off into a ladle and run into ingots, each large enough for three rails, which are carried hot to the blooming train, a set of massive rolls, which are run and reversed by a pair of engines, which reduces the ingot to the proper size for the finishing rolls. In some cases the bars are now luted up in an iron box with ashes, to remain several hours till the internal heat of the bar heats the surface, and the blooms can be rolled into rails with no reheating. So the only coal used is that of the blast furnace, where the ore is melted; though in most cases the ingot is reheated before passing the blooming train.

The amount of machinery in a rail mill is enormous; each blast furnace having two blowing engines of sixty or more inches diameter and air cylinder, which deliver air at a pressure of from five to ten pounds to the inch. The double engines that supply the twenty-five or thirty pounds of air to the converters, have condensing cylinders fifty-four inches in diameter by six feet stroke, driving air cylinders sixty-six inches in diameter. The blooming train engines are forty-inch cylinders, and the rail-mill engine is the largest hitherto built in this country, working on a single shaft, being double reversing compound, the high-pressure cylinder being forty-two inches, and the condensing cylinder seventy-two inches in diameter. At full speed of 150 revolutions a minute, they are capable of developing 12,000 horse power. The bloom passes through the finishing rolls seven times, and comes out a rail long enough to be cut twice, making three rails thirty feet long, weighing 600 pounds each.

The cranes, of which there is a great number, are moved by water under a pressure of 300 or more pounds to the inch, which also revolves the converters and reverses the engines. There are, also, numerous elevators to raise ore, coal and other material, and the cars for moving stock are drawn by endless wire ropes. Of smaller engines there seems to be no end, for cutting, punching, and drilling rails, driving machinists' tools, running dynamoes for electric lighting, etc. To supply steam for these engines, there are nearly 100 tubular boilers, set in rows in the boiler-house, from which the steam pipes run in every direction.

The main feature of the works are the three converters, twelve feet in diameter, rolling on massive trunnions, which work off ten tons of iron each, every blast, or forty-four tons an hour. They are charged with molten iron brought from the blast furnace. The blast is started and the spout turned upward, throwing a roaring column of fire caused by the combustion of the carbon in the cast-iron, which burns about fifteen minutes. Then the converter is turned quarter round and receives its share of melted spigle from a cupola; then another quarter turn dumps the steel into a ladle set on a central crane, from which it is tapped out from the bottom into cast-iron moulds, the whole process taking less than an hour; and the moulds must be emptied and cleaned, ready for the next blast. The two other converters are in use at the same time, one after another. All together, they get off heats at the rate of 4.4 an hour, making the grandest show of any in the iron business. The converters are revolved, and the cranes raised, lowered and turned from a pulpit, so-called, where half a dozen boys handle the levers that move the great masses of iron as though it had no weight. It is one of the grandest triumphs of machinery. Some weights will give an idea of the magnitude of these machines.

Converters and supports.....	472,000 lbs
Rail engine.....	436,000 "
Blowing engines.....	464,000 "
	<hr/>
	1,372,000 " or 686 tons

A complete steel rail works requires about 600 men and from seven to eleven locomotives. Braddock's field rail mill made 6,000 tons of steel rails in one week (six days and five nights), weighing 60 pounds to the yard, 20,000 rails in 132 hours. This is the highest run ever made.

South Chicago made about 1,760 rails in twelve hours, for one day only; average month of 1,200 to 1,500 rails in twelve hours, would be considered good running.¹

In a modern blast furnace two tons of ore will make one ton of pig iron; 2,200 pounds of coke will make 2,000 pounds of pig iron.

In a cupola, one ton of coke will melt eleven tons of pig iron.

¹ South Chicago Rolling Mill.

It takes about 120 pounds of spigle to one ton of pig iron ; 2,200 pounds of pig iron, melted and blown, will make but 2,000 pounds of steel ingot.

In ten tons of ingots, 700 pounds is cut off at the blooming shears. In heating and re-heating ingots and blooms, about two per cent. is burnt off.¹

By the usual process it takes two and a half tons of coal to make a ton of bar iron.²

IRON IN MICHIGAN.

It is reported on doubtful authority, in the census of 1840, that there were fifteen blast furnaces in Michigan, all in the southern part of the State. Probably most of these were foundries, casting pig-iron brought from other States, the total being only 301 tons. From 1840 to 1850, no progress, from 1850 to 1860, three furnaces were started, using bog-ore, and they were all in use in 1857, but went out of existence before 1860, when Lake Superior ore came into use.

The famous Lake Superior ores, which now furnish more than one-third of the iron used in the United States, were first proved in a blast furnace in Sharon, Pennsylvania, in 1853, and their value was at once recognized. They had been worked into blooms at Carp River in 1847. The first blast furnace in Michigan was built at Wyandotte in 1855 by Eber Ward, who was the pioneer in the iron business in the State. One was started in Detroit in 1856, and another in what is now the town of Negaunee in 1858, all of which are now in operation. There are now twenty establishments running twenty-seven blast furnaces in the State, for making pig-iron, with a capacity of 844 tons a day.

In 1884, the Lake Superior iron mines produced of ore and pig iron 2,575,432 tons ; and the copper mines turned out 52,280 tons of copper.³

In 1865, no American iron was used in Detroit, bar iron and boiler plate being all imported. In 1860 it began to supersede foreign iron, and in 1865 no foreign wrought iron was used, and for the last ten years, Scotch pig has been driven out by native soft irons. Prices are a good test of improvement in the methods of manufacture. In 1855, bar iron cost eighty-four dollars a net

¹ G. B. Bartlett.

² C. H. Buhl.

³ United States Census.

ton in New York, and with freight and profit it must have been sold at over five cents a pound in Detroit. It is now below two cents a pound; boiler plate cost five and a half cents; a better article can now be purchased for two and a half cents; two inch boiler tubes, which sold for thirty-five cents, can now be bought for nine cents; and a keg of nails has been brought from Pennsylvania and sold in Michigan for less than two dollars a hundred pounds.¹

The largest, and with one exception, the only rolling-mill in the State, has two blast-furnaces of a capacity of 29,000 tons a year, twenty-one puddling and twelve heating furnaces, and fourteen knobbling fires, six sets of rolls, for plate mill, bar mill, and guide mill, muck rolls, and top and bottom mill. They have an engine for each blast furnace, and one engine to each mill, and make, when running the twenty-four hours, 100 tons of bar iron, and 30 tons of boiler-plate.

I quote from a letter describing the largest tube works in the world, situated on the field where Braddock was defeated in 1755. "Our location is all that could be desired, we have the most important feature of natural gas which has of late given the Pittsburgh district such a decided advantage over other manufacturing localities throughout the country. We own and control three superior gas wells, and a pipe line nine miles in length. We employ 3,000 men every day from January to December; we work night and day excepting Sunday, from one year's end to another. Our annual tonnage will amount to about 100,000 tons, and we make about 80,000,000 to 100,000,000 feet of tubular goods per year. The most important departments of our works are as follows: Refineries, Swedish knobbling, Fires, Forges Rolling Mills, But-weld Mill for sizes of tubular goods under $1\frac{1}{2}$ inches, Lap-weld Mill for sizes over $1\frac{1}{2}$ inches, inclusive, blacksmith shops, boiler shops, kalameining, and galvanizing shops, carpenter and pattern shops, converse lock joint shops, asphaltum enameling shops, and the necessary auxiliaries. Through our yards we have several miles of railroad tracks, and three engines of our own, for the rapid handling and shipping of goods."²

On looking over their price list I find they make over 1,400 classes of goods.

¹ C. H. Buhl.

² Stanley Gardner, National Tube Works Co. W. K. Muir, Eureka Iron Works, Wyandotte.

SAFES.

“Love of wealth in its various forms, has, from the earliest ages, made it necessary to throw about the accumulation of those who have been successful in obtaining it, effective safeguards to protect it from the devouring flames, as well as from the hands of those who always stand ready to appropriate to themselves that which is not theirs. The ancients constructed vaults of heavy masonry, provided with iron doors, locking with secret springs. Also, treasure boxes covered with iron or bronze, and in many cases secret receptacles in the walls of their buildings, many of which have been discovered in the ruins of cities in the old world.

“There is now in the National Museum at Naples a portable safe or treasure box, taken several years since from the ruins of Pompeii, which is probably one of the oldest portable safes in existence. It is thirty inches deep and thirty-five inches wide; the walls are two inches thick. It is made of wood, covered with bronze, ornamented with raised bronze figures. It locks with ingeniously constructed secret springs, and in its day was no doubt considered a safe repository for the treasures and jewels of some rich family, against the cunning thieves of that ancient city. From that early date till the beginning of the present century, little farther progress was made in the improvement of safes. The earliest record we find of any effort being made to make portable safes fire-proof, as well as burglar-proof, was in 1801, when in London, Boston, New York and Philadelphia, apparently almost simultaneously, it was discovered that coarse grained wood, saturated in a solution of alum, became largely non-combustible and a non-conductor of heat; and from that date until after the great fire in New York, in December, 1835, nearly all the portable safes made either in Europe or this country, were made of coarse-grained oak plank, from four to six inches thick, thoroughly saturated in a strong solution of alum, to which had been added, in some cases, uric acid. The planks were formed into boxes similar in shape to the modern safes and covered inside and out with heavy sheet-iron, and in some cases, bars of iron crossing each other, forming a sort of lattice-work, were placed upon the outside. This iron was secured to the wooden box with nails which had been provided with large cast-iron heads, giving the safe a very substantial look, but adding to it little strength. Their

doors were hung upon very heavy hinges and were locked with bolts shooting out from the top, bottom and sides of the door, and large key locks. The keys to these locks are a wonder to look on; some of them weigh two or three pounds, and the key-holes would almost admit a child's hand. These key-holes, however, were usually covered by a sliding plate which was held in place by a secret spring, the operation of which was supposed to be known only to the manufacturer and the purchaser. For about thirty years this style of safe was manufactured with slight changes, and many of them are in existence to-day. They had some merit in resisting heat, but the great fire in New York showed their defects; and improvements began to be made."

The modern safe consists of an outer box of boiler plate and an inner box of thin iron or tin, the space between being filled with some non-conducting material. Many substances have been tried as fire-proof filling, such as sand, ashes and asbestos; but now all reliable safes are filled with water-lime cement, this substance having the quality of taking up fifty-three per cent. of water, and holding it for an indefinite time in a crystalline form at ordinary temperatures, and giving it off in the form of steam, when subjected to a temperature of 300 degrees; and, by the well known law of expansion of matter, giving out cold, it will prevent the contents of the safe from burning, while any water is left in the lime. A curious experiment is shown by putting a large piece of crystallized water-lime, which resembles hard limestone, into a smith's forge and blowing on it for a long time, till, if it was iron, it would be heated red-hot, and then taking out and breaking it in two, the outside will be found to be dried white for a quarter of an inch, making the outer coating a good non-conductor of heat, thus protecting the water inside from evaporation. The inside will be a little damp and very cold, and it will bear a high temperature for a long time before parting with all its water.

This quality makes the modern safe fire-proof under the usual exposure to the heat of a burning building; and in no instance has six inches of this material been exhausted of its water so as to conduct the outside heat to destroy the contents within; and the safe would be perfect, if it was not necessary to make the jambs of the doors of metal, which conducts the heat into the inner box of the safe.

Formerly, these door jambs and frames were made of cast-iron;

and to give the necessary strength, they were made from one-quarter to one-half inch thick, thus giving a large amount of conductive metal from the outer or exposed portion to the inside of the safe. Recently an important improvement has been made in this particular. The jambs and door frames of the best safes are now made of soft steel one-sixteenth of an inch thick, which gives equal strength and reduces the avenue for transmittal of heat more than twenty-fold; and safes of this construction have been subjected to great heat by being buried in the burning debris of a building for weeks, and the contents found uninjured by fire. To guard against burglars, an inner chest is made of many thicknesses of the best steel, the inner half of the plate being soft steel of great tensile strength, while both the surfaces of the plate are of highly carbonized steel, which, in tempering are rendered exceedingly hard and drill proof. These plates are three-eighths of an inch thick, and from three to five inches of these plates will resist noiseless tools for many hours. Each layer is secured to the next by separate screws or bolts, so that no holes pass through more than three-quarters of an inch of the entire thickness; in fact, no such box has ever been rifled by thieves through the plates. The safe lock has gone through many changes since 1836.

At the world's fair in London in 1851, Hobbs picked the famous Bramah lock, and walked off with \$3,000 that was placed behind it. Punch called for some patriotic burglar to come forward and pick Hobbs' lock "for the glory of Old England."

All key-locks have long been abandoned, the key-holes being a too handy receptacle for gunpowder; and have given place to combination locks, which are locked on secret series of numbers, the lowest number of combinations being one to a million. The only way for a thief to open these locks, is to intimidate or torture the cashier till he gave up the secret, or opened the safe for them; and several martyrs to honesty, or the love of money, have laid down their lives rather than be unfaithful to their trust. This danger is now avoided by the use of the "time lock," in which a clock, running inside the safe, moves a camb in such a manner that the door can only be opened at a predetermined hour. Immense fire and burglar proof vaults are now in use, having separate receptacles to rent, and fire vaults are built to shelter money boxes of enormous strength, sometimes weighing 40,000 pounds, and costing from \$5,000 to \$15,000.

Portable safes are made of every style, from a family safe costing thirty-five dollars to an immense fire and burglar proof concern, weighing twenty tons, and costing several thousand dollars. Thirty thousand safes a year are manufactured in the United States.¹

There is one safe manufacturing company in Michigan, employing 350 hands, making eighty-five varieties of safes, with a capacity of 4,000 safes a year.²

CLOTH.

It was not very long ago that calico came from Calcutta, India muslin from India, Cashmere shawls from Cashmere, nankeen from Nankin, carpets from Turkey, and silks from China. The teeming millions of Asia made most of the dress stuffs for Europe and America. Times are changed now, and the people of those countries are now clothed by the products of the looms of Manchester and Lowell. At the first quarter of the present century wool and flax were spun and woven in most households, and the greater and lesser wheels were always in motion. The little flax-wheel fell before the cotton-gin and spinning jenny; the larger wheel may still be found by the curious at work spinning stocking yarn; but its day is past. Ten cotton spinning factories, which made warp for hand looms, were started before 1814, on which year the first weaving mill was built at Waltham, Massachusetts; but so slow was the progress of the art, that in 1837 they had but two crank looms, and the beaters were driven up with cambs. Such has been the increase of the business in fifty years, that one city yearly turns out 250,000,000 yards of cotton cloth, 1,300,000 yards of woollen goods, and 3,120,000 yards of carpets; and the mills of the United States furnish 2,300,000,000 yards of cotton cloth. The elaborate carpets, shawls, ribbons, laces, silks and pattern goods, are now woven by power, and sold at prices far below the prices of 1836, as many of you remember calico at fifty cents a yard, which can now be bought for ten cents.

Forty years ago one of the largest items sold by our druggists was dye-stuffs, and fulling mills were in every town; but now Michigan makes less than one per cent. of the woollen goods of

¹ D. O. Paige.

² Detroit Safe Company.

the country. We spin considerable yarn and have knitting mills at Pontiac, St. Joseph, Centerville, Ypsilanti, Detroit and other places. The largest runs 400 machines, with a sixty horse-power engine, uses 2,500 pounds of yarn a day making stockings, mittens, tippets, German socks, etc. They can make 1,000 dozen stockings a day.¹

PHARMACEUTICAL.

But in one direction, Michigan has, in a few years, placed herself far in advance of the world; for Detroit manufactures at least half of the pharmaceutical preparations, and three-fifths of the pills made in the United States; and twelve years ago the business, as it is now carried on, was practically unknown. Now two great factories, using every variety of machinery, have so improved the quality and lowered the cost of these preparations, by working on such an immense scale, that they are fast supplying the world. Besides supplying the United States, Canada, Mexico, Central and South America, they make great shipments to every part of civilized Europe, Asia, Africa, and Australia, and even trade largely in Central Asia, China, Japan, Corea, New Zealand, Feejee and other islands in the Pacific; and all this is legitimate business, in non-secret remedies, no so-called secret or proprietary medicines being now made in the State.

"The practice of pharmacy dates from a very early period, and the improvements which have been wrought are many. It is not difficult for many persons now living to recall the custom of physicians in the early history of this country to supply their own medicines, and to prepare many of them from the botanical drugs which probably were gathered by their own hands. The 'herb-doctor' is not an unknown individual to-day in some sections; but the duties of the pharmacist are quite clearly defined in the present age; and it is his mission to supply such medicines as the medical profession demands and to make such improvements as his knowledge and experience will admit." The origin of the pill is unknown to the writer. It is one of the first things we hear of in this world, and frequently one of the last. It was customary for a long time, and to the present day this is largely practiced, that the physician made his own pills, mixing the ingredients in a mortar, rolling them and cutting them on an old pill-tile, by the

¹ Rush Brothers, Detroit.

aid of a spatula. As trade increased, the apothecary would provide himself with a pill-machine, which would enable him to roll the mass into pipes or cylinders more rapidly and more uniformly, and to cut them much more readily; but when these disagreeable and nauseous medicines were prescribed in this uncoated form, the patient could not but object; and for this reason the reputation of pills became somewhat clouded, and the skill of the pharmacist was called upon to overcome these objections. At the present day pills are manufactured mostly by large manufacturers. It is not unusual for him to make several millions of one kind; and by these extensive operations he is able to ensure uniformity in size, can produce them much more perfectly, and at greatly reduced cost.

Besides this, he adds a coating, usually of sugar or gelatin, although many other substances are employed, and this coating so completely disguises the ingredients of the pills that they are swallowed with no more difficulty than a piece of confectionery. For the manufacture of pills there are many machines in use. The sugar-coating is done in large, revolving pans, the same as are used by the confectioners. The process of gelatin coating, which has come into general use in the last decade, one hundred or more pills are dipped in gelatin at one operation; the bars with the wet pills attached are placed under currents of warm air. The "mass" is a very important item in the process. Particular care is necessary in weighing the materials, in the selection of the proper excipient, and in the thorough mixing of the two into a mass.

"We cannot give you statistics as to the number of pills manufactured in this country. It is customary with us to keep an account of the pills we make by count, rather than by weight; and we expect that our output this year will amount to over 300,000,000 pills. This would, at even figures, provide six pills for each man, woman and child in the United States." There are probably four hundred tons of pills made in the States, of which Michigan furnishes three-fifths.

"There is a line of goods on the market, known as empty capsules, which have an enormous sale, and which are comparatively new. They are used principally by the retail druggists, as covering or vehicle for the plain pills which they manufacture. We dispose of several thousand gross of these boxes of one hundred

capsules each, 100,000,000 capsules annually ; and the consumption is on the increase. They are of all sizes, from the little one of one grain capacity, to the large one holding one and one-half ounces," the largest for veterinary use, being one inch in diameter by two and one-half inches long. They also furnish soluble elastic capsules, filled with nauseous medicines and tightly sealed, making that horror of our childhood, castor-oil, a luxury, and the swallowing of the disgusting oil of cods' livers, as pleasant as eating oysters, the dose being seven-eighths of an inch in diameter by two inches long.

"Our business is based principally upon botanical drugs, from which we make fluid extracts, powdered extracts, concentrations, alkaloids, etc., etc.; many of these are consumed in pills; but more are sold or used in other forms. To carry on these several branches, more knowledge, more capital, and more extensive machinery are required than to make pills; considerable power and plenty of free steam are necessary. Our milling department has to be fully equipped to grind everything, from a simple leaf to a root as tough as ironwood. To 'exhaust' from these ground drugs their medicinal properties, are required large vats, percolators, powerful hydraulic presses, evaporating pans, stills, condensers, etc., etc. Many of the processes are not free from danger, and more require a skilled hand to guide them successfully. Accompanied with these we have to deal at all times with the possibility of a serious, if not fatal, error in this business of 'eternal vigilance.' Fluid extracts are produced from the drug by percolation of alcohol through the drug, the extract being so concentrated that one minim, or so-called drop, equals one grain of the drug; they will keep indefinitely, taking the place of numerous liquid preparations now obsolete, such as water infusions, teas, etc."

The evident advantages of fluid extracts have proved so great that the uses of them have become enormous, and the amount of skill applied and machinery invented for their manufacture is very great. The factories built seven years ago have been doubled in size, and are now overcrowded; and they do not supply human wants alone, for last year one concern turned out 450 tons of animal medicine.¹

¹ From information furnished by Frederick Stearns and Parke, Davis & Company.

A NEWSPAPER.

The newspaper has become a necessity of our daily life. Breakfast without it would be a mockery. It is served out hot, by daylight every morning, and we are not satisfied without five editions of the evening papers. The progress of printing is well illustrated by the progress of a paper, the publication of which antedates the admission of the State into the Union. Starting in 1833 as a weekly, and changing into a daily in 1835, it has lived till to-day, and who knows that it may not last till the next semi-centennial!

"The publication of a daily paper in a quaint little French village of the Northwest, containing less than 6,000 inhabitants, destitute of railroads, with uncertain mails, and the telegraph unheard of, might well be noted as extra-hazardous."

From 1831 to 1846 the several editions of the paper were "worked off" on a Washington hand-press, the motive power being a stalwart "Jour." who manipulated the sheets and "pulled the devil's tail," while a diminutive imp, the "printer's devil," inked the type previous to each impression. A good pressman could print a "token," or 240 sheets an hour, on one side, and a daily edition of 1,000 would require about nine hours press-work. It may be imagined that their daily circulation was somewhat limited. At the latter year, finding it necessary to increase their capacity for press-work, they procured a drum cylinder power press of R. Hoe, of New York. This was the first power press used west of Buffalo, and upon it were printed the session laws of 1845. Though called a power press, it was run by men turning a crank, and it was used for printing the daily till 1859, when it was superseded by a small cylinder three revolution Hoe press, known at that time as the "lightning press."

With the advent of railroads and improved steam navigation on the lakes, the population of Michigan had greatly increased. The telegraph (that great right hand of the daily press), had included in its net-work of wires every important town in the State.

With increased facilities for the receipt and transmission of news, the circulation of newspapers increased. Then came the civil war and the rush to the front. Nearly every family in Michigan had its representative on the various battlefields from 1861

to 1865, and every item of "war news" was watched for, seized and devoured with feverish interest. No effort was spared by the paper to meet this demand, and its circulation increased so rapidly that in 1861 a double-cylinder Hoe press and steam folding-machines were started, and with both presses running night and day, they were enabled to supply their patrons promptly, and continued to do so until 1873, when a Bullock perfecting press and Scott folder were placed in the press-room. This press, with the addition of an improved "Clause" folder, was used for printing the several editions of the paper until 1884, when they placed in the press-room a second Bullock press and folder, with all the latest improvements. These presses are now constantly at work employed in printing its various issues; and the little backwoods daily of fifty years ago has now an average daily edition of more than 20,000 copies. Two engines drive the shafting on three floors, as well as the powerful dynamos which furnish electric lighting from basement to roof. Thirteen job presses of various patterns print a variety of work, from a business card to a mammoth theatrical show-bill. They have also a large electrotype foundry, to which is attached a wood engraving department, the whole being a striking contrast to their small beginnings fifty-five years ago.¹

NEWSPAPER PRINTING.

Hand-made paper was in flat sheets; and when power paper-machines, which left the paper in rolls, were introduced, the printer, following his old custom of using flat type, required the paper cut into sheets of the proper size, before printing. All printing presses before 1876 worked on single sheets; and the "Hoe" machine is an immense affair, many men being required to feed in the paper, sheet by sheet.

About 1863 some innovator happened to think that paper might as well be printed right from the roll, and then cut off; and so the whole method of fast printing was changed, for the modern press takes the paper from the roll and delivers newspapers folded, ready for delivery. These presses have two printing rolls, the length of two papers, each having a duplicate set of type, and each roll prints two copies of one side of the paper. After passing the type, the long strip of paper is cut lengthwise and cross-

¹ From information furnished by the Detroit Free Press.

wise, before it comes to the folder, making two distinct papers, and the folder doubles, cuts, pastes, and doubles again, and 20,000 newspapers ready for the carrier boy drop from the machine an hour. The type-rolls being twenty-four inches in circumference, so the paper passes through the press at the rate of 333 feet a minute, or over 3.87 miles an hour. Type set in the usual manner are printed on a soft thick paper, which is fitted inside of a half segment of an iron cylinder, a core is adjusted in the centre, leaving a space of about $\frac{3}{8}$ of an inch between the paper and the core, which is filled with melted type metal, making a stereotype of one-half of the paper, four pieces being cast and squared-up by a simple process, they are fastened to the rolls ready for business. This can be done very quickly, for two sets of papers can be printed and the circular stereotype plates cast and adjusted to the machine, ready for work in less than an hour. Therefore the news that arrives within an hour of going to press can be printed; when hourly editions are wanted, a new plate is cast and fitted to the machine with very little delay. These machines take up little room, and not much power to drive them.¹

FIGHTING TOOLS.

In 1861 the people of the United States were called from their usual avocations to go to war. They were green in the business and had few arms, and those old-fashioned and superannuated; so the machinists went to work to make fighting tools; having no plans, they had to evolve their ideas from their own consciousness. In place of the old muzzle-loaders came the breech-loader, and multiple charge guns; and revolvers came handy for close work. Cannon were to be made, and foundries built to cast them in; but we soon had sixteen and twenty-four inch cannon. Iron began to take its place in fortification, for the barbed wire fencing was at once utilized as an abattis and proved an awkward one to break through. River boats were made bullet, and tolerably cannon ball proof, by railroad iron and other plating; even the protection of chain-cables, hung over the sides of ships, was successfully used, and made harmless many a hostile shot. But the crowning result of the labors of the mechanical engineer was the fighting-machines called Monitors, which were so well protected

¹ Buffalo Express.

that though exposed to the fire of the heaviest artillery then in use, they were perfectly shot-proof. Some of them now bear the marks of nearly 400 shot, many of them from guns of ten-inch caliber, not one of which did any damage, except to paint.

They are the only iron-clads that have ever been successful in a sea-fight with an iron-clad; and every opponent they met was driven off, sunk or captured. The last sea-fight on the coast of Peru, was between a monitor and an English built iron-clad, in which the monitor came out ahead. Everything in these vessels is worked by steam; the anchor is hoisted, the engine is driven, the turret is turned; the engineer with a reversing lever in his hands points the great guns, steam closes the port shutters, and drives the blowers that supply the air to the crew and for the boilers, which are all below the water line. They are as much a machine as a locomotive is, and have neither the form nor the semblance of a ship. Instead of riding over the waves, the waves go over the vessel; and yet they are sea-worthy, one of them making a cruise round the world.

After laying up for twenty years, a crew was ordered to take one of the monitors to sea. The papers called them floating coffins, and censured the Navy Department for risking men's lives by sending them to sea in such a craft. Mothers wrote to their sons, asking them to resign their commissions, rather than to risk their lives so foolishly. Some petty officers were suddenly taken sick about that time.

An engineer in charge of fitting the craft for sea, told me there was nothing to do, except to clean off the tallow and white-lead from the bright work, oil up, get on steam and start. They were all ready for service after twenty years of rest; and we all remember what service they did in time of need. They may have been superseded by more modern iron-clads; but a fleet of such machines, throwing sixteen-inch shot, would be an enemy not to be despised. In the last war we built many wooden vessels that did good service; one of which, the *Kearsage*, is the only steam craft afloat, that ever fought a sea-fight on equal terms, meeting off the coast of France an English built and armed steamer, manned by Englishmen, making short work of sinking her, and receiving no serious damage herself. Such iron-clad vessels, so invulnerable against ordinary projectiles, have one weak spot, as Achilles after being dipped in the River Styx, was proof against

hostile spears and arrows, everywhere except in the heel, so these sea turtles would succumb to a wound below water; one of them being sunk in Charleston harbor by a sub-marine torpedo-boat, the crew of which shared the same fate as their victims. Against a fleet of torpedo-boats, running at great speed, capable of exploding a charge of gun-cotton six feet below water, and manned by "men that dare to die," the strongest armored leviathan would be in danger. Though we have at present no use for such machines, experiments are constantly being made, and various forms of torpedoes tried, some to set in the channels, to be exploded by electricity, when an enemy is passing over; others, driven by compressed air, are guided by electric wires from shore. I hope it will be after our day, before we have to prove their efficiency in actual use, as one war is enough in a generation; but the maxim, "in time of peace prepare for war," is old, if it is not good.¹

HOUSE-WORK.

Mechanics have made great changes in the farm and household. Compare the present plows, shovels, hoes, forks, etc., with those we remember to have used when we were boys.

Hay is now cut by a horse-mowing machine, instead of the scythe, and raked, loaded and moved away by horse-power. Instead of the sickle and cradle of our fathers, horse reapers and binders have come into use, and steam threshers and winnowers have taken the place of flail and crank winnowing-machine; even our potatoes are now dug by the aid of the horse. A man can now do three times as much work as he could fifty years ago. With our stoves and the improvements in the construction of our houses, our rooms can be heated and our food cooked with one-fourth the wood formerly used in the old fire-places; and the sawing and splitting are done by steam-power, instead of a man breaking his back over a saw-buck, or blistering his hands on an axe-helve. In towns, coal has superseded wood for fuel; and hot air furnaces and steam boilers heat our houses, and gas-stoves do our cooking. Water is brought into our houses and distributed hot to our bathrooms, and the slops carried away in tight pipes to the sewers; hand pumping, and trips to the spring or river for water, and the sink-spout and its filthy puddle, are things of the past. House

¹ F. B. Bartlett, U. S. N.

fixtures, such as hinges, door-knobs, locks and window fastenings are much improved; furniture is strong and light and of great variety; window glass is now to be obtained in large panes, and does not distort the image of things seen through it. We have electricity to ring our door-bell and guard us from burglars, and the telephone to go our errands.

The old-time farmer worked early and late. He went to May-Training, Fourth of July and Muster. He kept Sunday, Fast-day and Thanksgiving idle, and always went to Town Meeting; and when it rained so hard that no outside work could be done, he went fishing as a matter of business, not to found a romance on; and if he hunted, it was for meat or pelts. As bad as he hated waste, and as well as he loved money, he would go to meeting twice a day on Sunday, on a good hay-day, after a long rain, and never lift a pitch-fork, though he had tons of hay down and spoiling.

His books were few, the Bible, the almanac, and if he lived in New England, Fox's Book of Martyrs were in every house; but he kept his boys and girls in school three months in the year. He was his own house builder, blacksmith, shingle-maker and shoe-maker; and he slaughtered his own cattle, and killed his own hogs and smoked their bacon.

HOUSE WORK—WOMEN.

But one thing the advance in the arts has done, of more importance than anything else. It has reduced the necessary labors of women. They think now their work is never done; but in old times it never could have been finished. The women of half a century ago, lived in cold houses, slept in cold rooms, and cooked over open fires in great fire-places, baked their bread in brick ovens, boiled their meat and potatoes in pots and kettles hanging from the crane, or fried them in spiders, set on the coals; meat to be roasted was hung by a string in front of the fire and turned and basted continually. The fire had to be banked up at night, for if lost, sparks had to be struck with a flint and steel, and the tinder-box was on every kitchen mantel-piece. The use of friction matches has done away with any amount of labor, and there were no matches fifty years ago. And they literally sat in darkness, for the whale-oil lamps and tallow-dips only made the darkness more visible. What a nasty job it was to melt tallow in

the great kettle and clutter up the house dipping candles, getting the wicks strung on sticks, and dipping them into the hot fat, hanging them between chairs to cool, and then dipping them over and over again, till the kitchen-floor was slippery with grease! And then came the horrors of soap-making, with its leach-hogs-head, caustic lye and foul smelling soap-grease, the dirty labors of hog killing time, with its sausage-meat to chop and hog's cheese to be made, pig's feet to be pickled and all the lard to try out; and then the turkeys and chickens to be picked and cleaned. Pork and beef must be salted down for summer eating and fruit preserved for winter, roots and herbs hung up for sickness, and barrels of cider boiled down to pailfuls for apple-butter. Then the flax for warp must be spun on the little wheel; and the woolen filling on the greater wheel, the loom set up, and cloth for clothing the men-folks, women and children, was slowly woven, and then made up for the family, without the aid of a sewing-machine. Patch-work must be made, not for beauty, but to save every scrap of cloth for bed-clothes; and then came the never-ending task of spinning and weaving linen sheets and table-cloths, and under-clothing, and no end of blankets and coverlids; and to fill up the spare time, stockings must be knitted and darned, and the family mending kept up from week to week. Then the milk must be taken care of all the year, and butter and cheese made, and the milking done in haying-time. With all these duties, she never did outside work on the farm; that was men's work; and she drew a line there. And all the time, three meals a day must be got; the dishes washed, the pewter plates polished, the floor swept and sanded.

Washing-day came every Monday, when the boys must be scolded into bringing soft water from the brook, followed by the ironing day, when the irons were set to heat between the andirons, in front of the kitchen fire. Once a week the front parlor shutters must be opened, and the best set of furniture dusted, and shut up again; and every Sunday morning the children must be washed, dressed and made to put on shoes and stockings, and everybody must ride to meeting, and sit in the cold pew if in winter, only mitigated by the foot-stove filled with coals from a neighbor's fire.

Our mothers and grandmothers had little time for German lessons and high teas. It was a struggle for existence; and in the

old grave-yards the tombstone of the men often had for company, one or more older stones, sacred to the memory of his former consorts.

CHILDREN'S PLAY.

Men and women change, but nothing is so conservative as a child. In digging the bone-caves for the remains of the pre-historic man, who hunted the tiger and hippopotamus in England before the great Ice Age, and among the later race of Esquimaux who lived at the foot of the glaciers in Central Europe, we find among the arms and ornaments of the primitive man, the playthings of children, their dolls, model canoes and other toys; and no doubt when our Arian ancestors started from Central Asia to overrun and conquer the world, the boy of the period had his pockets stuffed with marbles, and at every halting place got up a game of three-old-cat, or if the horde was large enough, a game of rounders, with as much interest as we now have in a league game of base ball, the modern form of that amusement. At the Centennial in Philadelphia, there was to be seen an old bronze Greek statue of a shinty player with his crooked stick; and no doubt the cry of "shinney on your own side" has been shouted in all languages, from that day to this, and the old Roman and the modern Scotchman pitched the discus or quoit.

The Indian game of lacrosse has been refined into lawn tennis; and the cat of to-day is shown on the Harlem tapestries, worked at the time of William the Conqueror. Who sets the season for boys' games? Why must marbles be played on the first dry land after the snow leaves in spring; or ball and football in the heat of summer? Why cannot kites be flown in the gales of March, instead of in the calms of August? and why are peg-tops of no value in any month but June? If the old man of to-day wishes to renew his youth, let him go to the circus, he will see exactly the same feats, and hear identically the same jokes as were in vogue fifty years ago.

Few or none of the games we now play, are new. Chess, the most complicated of all games, has been played from time immemorial in Western Asia, and in 1822 Cochrane found it universally known among the half civilized tribes of Siberia. Cards and dice are hundreds of years old. Pope in "The Rape of the Lock," gives a good description of the game of whist, which is still played among us by children of a larger growth; and no peo-

ple so savage that gambling is unknown amongst them. Though the games are old, modern mechanics have constructed more perfect implements with which to play them. The old jack-stones are now iron castings; the shops are gay with life-like dolls; turned base ball bats are sold by the cord, along with perfectly made balls, gloves, spiked shoes and masks. Lawn tennis racquets are works of art; and playing cards are wonderful for their finish. Large manufactories with ingenious and costly machinery are employed in making the various playthings.

THE BICYCLE.

One of the greatest triumphs of modern mechanism is the bicycle, being a most ingenious combination of steel, brass and India rubber with a wheel from 50 to 60 inches in diameter, and weighing from 23 to 55 pounds, the lightest being for racing, the average roadster weighing 45 pounds, and capable of carrying a man over country roads.

The embryo machine was used about fifty years ago, and consisted of two wheels connected by a bar across which the rider straddled, shoving himself with his feet. This was followed by the velocipede, with two nearly equal wheels, between which the rider sat and worked the machine by a set of cranks with his feet. Now the rider sits directly over the large wheel, working his feet downwards, on either cranks or levers, therefore using his weight to great advantage. They are much used for pleasure or business, there being in use in some of our small cities from 700 to 1,000. They are a great convenience to their owners. A young man writes: "We have gone from Detroit to Pontiac, and 14 miles beyond (40 miles), visited five hours, and returned home the same day. I have also made over 100 miles between sunrise and sunset." The bicycle seems a mechanical paradox. With its aid a man can accomplish more, with less exertion of his muscles than in any other way. He can outstrip the fastest horse, and tire out the strongest runner, and still carry with him a machine weighing over forty pounds. The performances on these machines seem incredible. Few horses have ever traveled twenty miles in an hour, but this is not an uncommon feat on a bicycle. No horse dreamed of getting over 281 miles of ground in twenty-four hours; but this has been done on one of those machines. For a single mile the horse made the highest

speed; for a mile has been trotted in 2 minutes, $8\frac{1}{2}$ seconds. Running horses have made their mile in 1.40, and the highest speed of a bicycle is 2.25, but as this was made from a stand-still and the horse had a flying start, the difference is slight. The nearest approach to their speed by man is the skating one mile in 3 minutes and 20 miles in 1.14. The fastest time a man has ever made on foot was a mile in $4.16\frac{1}{2}$, and 10 miles in 57.26.

But it is in endurance that the bicyclist exceeds any other traveler; for in racing, at the eleventh mile he passes the fastest running horse, and he has made 100 miles in 5.51, three hours quicker than the horseman gets over the ground. The longest distance in a "go-as-you-please race" made in six days, is 610 miles, against a record of 1,009 miles in the same time by a bicyclist.

Since the foregoing was written comes the report that the record has been broken, and that a bicyclist has made 300 miles in less than twenty-four hours.

THE PHOTOGRAPH, SEWING MACHINE, ETC.

Many things which are as "household words" to us, were absolutely unknown to our fathers. The daguerreotype not being fifty years old, which was followed by the ambrotype, a picture on glass, the photograph being in use in 1853, and the dry plate came in three years ago. Nothing is so universal as the photograph. Every family has a picture gallery, and the photograph album is on every parlor table. One of the oldest men in the business has taken over a million and a half of pictures. Copies of all the famous pictures, and photographs of the famous statues and buildings, are for sale; and instantaneous views are taken of crowded streets, of horses at full speed, and of cannon balls just leaving the gun; draughtsmen multiply drawings by this process, and photographs of machines are sent out as samples. The explorer of new countries carries his box of dry plates, and brings back pictures of the scenes and inhabitants of strange lands; even the rock temples of Petrea, and the interior of the Pyramids are now shown by the magic lantern. With one exception, we have views of all the famous buildings and mines on the face of the earth; and we hope before long some fearless followers of Burton will bring us a

sun-picture of the holy Caaba of Mecca, that forbidden city, that is death for a Christian to enter.

The coolest thing in photography was done when the *Proteus* was crushed by ice in Smith's Sound, up in the Arctic regions, a few miles from Cape Sabine, where most of the Greeley party spent their last winter. A young man who had charge of the chronometers had a dry-plate machine with which he was constantly practicing.

In the morning he took a view of the vessel becalmed; a few hours after, the ship being in danger by the closing together of the ice, all hands were ordered to leave the vessel. He took his chronometers to a place of safety on the ice, noted the time on his book, and took a view of the ship just as she was being crushed by the ice. Five minutes after he noted the time of the vessel's sinking, and ran up and took a photograph of the hole through which she sunk. These views were published with his testimony, in the report of the investigation that followed.

SUNDRIES.

That emancipator of woman, the sewing-machine, is not forty years old. I remember of hiring a room in the shop in which I worked, and with a few tools, and one good machinist, turning out the first dozen that were ever sold. The industry has been carried on in great establishments, and 1880 building nearly fourteen million dollars worth of machines. The latest of these machines will make 2,000 stitches per minute.

The birch broom of our mothers has been superseded by one made from the tassels of the broom-corn; and within thirty years the carpet-sweeper has found a place by our fire-sides.

The changes of fashion in dress have built up and ruined great industries. Twenty-five years ago a lady's dress was built in the form of a pyramid, tapering from the peak of the bonnet down to a base four or more feet in diameter. To form this immense structure, great factories were built, to flatten the steel wire for springs, and to cover it with braid; and the making of hoop-petticoats employed thousands of men and women. But the business shrunk as ladies' skirts decreased, till the whole business was abandoned, after living about fifteen years.

The ever-twinkling knitting-needles have been driven out of sight before the power-knitting-machine; for the fastest knitter

could not make over one stocking a day. Now first-rate woolen stockings are sold for less than 25 cents a pair.

Fifty years ago, books were expensive, and free libraries were unknown. Now we have a library in every school district, and great public libraries in our large cities. Copies of the works of the best authors, thanks to the want of international copyright, are sold for from 10 to 20 cents a volume.

Original paintings by the great masters are beyond the means of the wealthiest men, and none but European travelers can ever see the best of them. But by the aid of the chromo, a reproduction of the master-pieces of ancient and modern art (more or less bad) are sold in all print shops, and given away as an advertisement. The tobacco show-bills are a picture-gallery of themselves; to say nothing of those of the soap, shoe and perfumery dealers.

Twenty years ago, a lumberman looking at the zig-zag fences in our fields, said: "If Michigan had to be refenced, it will take every tree in the lower part of the State; or some other method of fencing must be invented. The thousands of tons of barbed-wire in use has solved that question.

Carpenters well remember the old-fashioned screw that had to be started with a gimlet; and bless the man who invented the gimlet-pointed screw.

Type-writers are a new invention. With them we make many copies at one time; and those unfortunates whose handwriting is illegible can make themselves understood in print. Unfortunately machinery will not correct bad spelling.

To give an idea of the speed of type writing, I quote: "The average rate of speed of an expert type writer operator, on legal matter written from dictation, is about fifty words a minute or thirty folios of one hundred words each, an hour. This includes ordinary delays of dictation. For trial minutes, experts can attain a speed of one hundred words a minute, or possibly more, on new matter. The highest record of my own, that I now remember, is seventy-seven words a minute. On a practiced sentence of common words, a speed of one hundred and twenty-five a minute, or more, may be attained. The speed of fifty words a minute may be maintained until the operator requires food or sleep, without excessive exhaustion. Eighteen or twenty folios

an hour is a good average speed when the operator reads the matter from clear copy.”¹

LITHOGRAPHY.

“Lithography, or the art of printing from stone, dates back about ninety years, though little use was made of it till within forty years ago.

“The stone used for this purpose is a very compact homogeneous limestone, found in layers varying in thickness from one to six inches. The process of lithography is based upon the well-known antagonism of water and oil. It may be said to rest on the following properties of the stone: 1st. That a drawing made upon the surface of the stone with fat ink, or crayon, of similar constituents as the ink, adheres to it so strongly as to require mechanical force to remove it.

“2nd. That the parts of the surface not covered by the drawing receive and retain water.

“3d. That a roller or other instrument covered with fat ink, being applied to the surface of the stone when wetted, the ink will attach itself only to the drawing on the stone, and will be repelled from the wetted parts.

“It will thus be observed that lithography differs entirely from the other graphic arts, not only in the material employed as a printing surface, but also in the causes or means by which the impression or print is obtained. Letter-press, block, or plate printing, are strictly mechanical processes; the impression from type is from a raised relief surface over which the roller passes, the parts to be left white being sufficiently depressed to escape contact with it. In printing from steel or copper plate, the ink is rubbed into the engraving, which has been cut or etched into the plate, and all surplus ink is entirely removed from its surface, while in lithography the printing surface is perfectly flat, and the impression is obtained entirely by reason of the chemical properties of the stone, water and ink.”

Fifty years ago lithography was almost unknown in the United States, and was started in Michigan about as early as in any other State.

I quote from a letter from one who knows its history in the

¹ F. E. Rankin, Detroit.

State: "In 1861, just a quarter of a century ago, when lithography was comparatively in its infancy in this country, and almost unknown in the West, when skilled workmen, machinery and materials were to be obtained with few exceptions, only in Europe, the founders of this enterprise laid the foundations of their present large and prosperous establishment.

Developing and increasing with the State and country, it has now become one of the foremost lithographic establishments in the United States. The crude small hand-presses of foreign manufacture, have given place to huge steam-presses of American production. Every improvement in the process and in machinery has been taken advantage of, and at the present time with over 200 employes, the company is shipping its productions to every section of our country; to Mexico, Europe, and the far-off Islands of the sea, an honor and credit to our great State.¹

THE WORKS OF MAN UNAIDED BY STEAM.

I have spoken of that which man has accomplished by the aid of steam and organization; but great works have been done by men's hands, with little help from their heads. We look with wonder at the ruins of Karnae, the pyramids of Egypt, and the gigantic stones at Baalbec, as though such works would be impossible to-day.

No doubt the old workmen had skillful architects to design, and good foremen to execute, great patience and plenty of main strength and stupidity for the heavy lifts. If anybody would furnish the money, he could close a contract, any day, to duplicate any or all of those works; and if they would pay ten per cent. on the investment, we should have them in every town. But these great works are not to be compared with what man, without the aid of machinery, has done in America by his own hands. The first settlers found an unbroken forest stretching from the Atlantic to the Mississippi river; and went to work to clear it up. Tree by tree the forest disappeared; generation after generation of axe-men hewed out homes, and by the aid of fire, let in the sun to their little clearings. (The settler in the forest hates a tree. It keeps his land a swamp, and the sun from his crops; and his first aim is to exterminate the forest.) Among the

¹ C. H. Candler, Calvert Lithograph and Engraving Co., Detroit.

ashes of their fires they raise small crops between the stumps; and by persistent labor the roots are removed, till the sleepy oxen have room to draw the plow; grass springs up, the cattle increase, and the once howling wilderness becomes smooth pasture, or cultivated field.

The first inland communication in a new country is by Indian trails. Next comes the blazed track of the landlooker, followed by the winter road, passable only on the snow, then the roads are cleared of trees, stumped, corduroyed, and turn-piked, so as to be passable in summer; bridges are built, plank and gravel improve the roadway, and finally comes the paved streets of cities.

Settlers establish themselves in the wilderness, and farms are cleared up and improved. After fifty years we have within our borders 205,000 farms, aggregating 18,400,000 acres, of which 10,000,000 are improved into tillage, orchards and mowing, and the remainder is yet in wood land or old unproductive fields. Of the remainder of the 36,800,000 acres in the State, 14,000,000 is yet forest, leaving 6,000,000 acres for roads, towns and cities. To hew out and grade the roads, clear up and plant the farms, represent more human labor than all the other work that has been done in the State.

The amount of human labor that is yearly expended in cutting and preparing for stoves and fire places the 145,778,137 cords of firewood that is annually consumed in the United States, will be appreciated by those of us that have cut and corded it at \$1 a cord.

IN CONCLUSION.

For my part, I don't want any more of the good old times. The present time is the best we have ever had, though I hope not the best that we shall ever see. In fifty years we have reduced our hours of labor from fourteen to eight hours a day; our wages are doubled, and the necessities of life are much cheaper. The great curse of drunkenness is very much diminished. We live in better houses, better warmed and lighted, and we are better clothed; a high school education is in the reach of every child; books are free to all; the poorest laborer who meets with an accident in our streets will receive surgical aid that no king could purchase fifty years ago. Our great elevators and ware-houses store the products of plentiful years to supply those in which the

harvests are blighted; and our great railroads distribute the fruits of labor, so that famines are impossible. Beef killed on the prairies is distributed all over the country, and supplies the markets of Europe. Fish from the salt seas and our great lakes are eaten fresh, all over the continent, even in the most barren deserts; and tropical fruits are peddled round in all our streets.

When we consider the great advance we have made in fifty years, we may flatter ourselves that there are no more fields to conquer; but I have no doubt the machinist of 1836 thought *he* had put the cap-stone on the works of his predecessors.

I see two things beginning to loom up in the horizon that may completely change the whole system of manufacturing, and the use of coal and iron may become a thing of the past. The use of natural gas is in its infancy; but in the iron and glass works in Pittsburg it has taken the place of 20,000 tons of coal a day, and the field is widening every day. If this gas should be found inexhaustible; if, as some claim, it is caused by the decomposition of water by the internal heat of the earth, and thus liable to be found everywhere, and therefore we can get our heat without labor, it would be the greatest step the world has ever taken.

Distributed through the entire world, one-fourth of the contents of every clay bank is composed of a metal, ductile and malleable in the highest degree, indestructible by acids, lighter than glass, and much stronger than steel. When it was first made, it cost many times its weight in gold. Eight years ago it cost \$64 a pound. Within two years it has been furnished at \$4 a pound; and now it can be produced for \$1 per pound, and we may see the day when it will be as cheap as iron. If this should happen, it would make more change in the world than the use of steam has made in fifty years.

I prophesy that fifty years hence, the machinist who takes up the subject and passes it along for another half century, will have for his text *Natural Gas* and *Aluminum*.

ADDRESSES AT THE GRAND STAND.

HON. T. H. HINCHMAN, PRESIDING.

LADIES AND GENTLEMEN, FELLOW-CITIZENS: We meet to-day to recall and acknowledge the many favors conferred by Divine Providence on the people of this State in the past fifty years, and to mark the progress made. During the early years of a State this is necessarily material. Labor and efforts tend mainly to develop and establish industries; and to build, endow and maintain educational and other institutions.

The Legislature and Governor have considered it fitting and appropriate to celebrate this day, apprehensive that events beyond their control may forbid their observance of a Centennial.

We have lived in an extraordinary epoch. The inventions and developments the past fifty years have more than eclipsed those of many centuries, and, in some respects, those of all centuries. The advancement has been educational, in agriculture, invention, mechanics, physics, science and industry, rather than in religion, morals, architecture or art.

The commission appointed have aimed to present in addresses to be delivered this day, records of the past, appropriate to the occasion, which will be published in book form, for the information of the absent, those who are to follow and for those who will celebrate a centennial fifty years hence.

If in the coming half-century, a corresponding material and physical advancement is made, together with religious, moral, intellectual, medicinal and sanitary acquirements, this State will occupy a proud and distinguished position.

Moral, intellectual, or sanitary progress is not presented at the time, save only as it cannot be eliminated from the educational. Neither is architecture or art included. The two last are yet in a rudimentary state. They are indicative of wealth and luxury, and eventually mark culmination and decline, and become the enduring monuments of past greatness, when all things else have crumbled, decayed, or become oblivious. May many

centuries pass before art and architecture reach their climax in Michigan.

Shall we anticipate, though not in a sanguine or prophetic spirit, that intellectual, moral and sanitary achievements, illustrated and presented by historical, poetical, social words and literature may be the leading themes and characteristics of the gathering to celebrate the Centennial in 1936?

AGRICULTURE.

HON. W. L. WEBBER.

MR. PRESIDENT AND FELLOW-CITIZENS: It seems peculiarly appropriate for me to take part in this celebration. It is the semi-centennial of the State; it is also the semi-centennial of my residence therein. Fifty years ago, in the early days of June, among those who were crowding the means of transportation to reach Michigan, to seek homes for themselves and to assist in developing the agricultural resources of the State, was my father with his family. On the 11th day of June, 1836, he brought us to the farm which he had purchased from the Government, in the township of Hartland, Livingston county, consisting of two hundred acres of heavy oak openings, with a stiff clay soil. Though but a youth at the time, I took part with him in transforming this wilderness into a farm. The first step was to cut the heavy growth of timber from the land, to select sufficient therefrom to make rails with which to fence the fields, and to burn the remainder in order that the land might be rid of its incumbrance—an incumbrance then, but which, if standing now upon the soil, would more than add double to its present value. After the clearing of the land, the heavy breaking-up plow was brought into use, with its four-yoke of oxen as a team; and it was considered good work if three-quarters of the surface was fitted for the first crop. The many stumps and roots too large to be taken out by the plow, forbade more than this partial cultivation of the soil, and rendered extremely difficult the work which was performed.

The life of the pioneer was no life for a lazy man. The life of one was like the life of all,—constant labor to provide means for supporting the family. It was the life of the woodsman combined with the life of the farmer. Working early and late, sometimes

in sunshine, and often in storm, the pioneers laid the foundation in Michigan for its glorious development as an agricultural State. In those early days there were no highways fit to travel, mills were at a distance, and there were practically no markets. The pioneers contended against odds which many of the present generation would consider it vain to battle against. But it was necessary that some money should be procured from the farm products, because taxes must be paid in cash. To obtain this money wheat was considered well sold at fifty cents a bushel. In my own experience, I have taken eight barrels of flour to Detroit, a distance of fifty miles, and over the roads as then existing a journey of five or six days, and received only \$3 a barrel, or \$24 for the whole load.

But though the toil was severe there was no repining. There was no complaining of long hours or severe labor. There were many compensations for the hardships to which the pioneers submitted. Every man was willing to share with those who needed; every neighbor was a friend. Every latch-string was out, and no one feared to admit a stranger lest he might admit a foe. There was game in the woods, and fish in the ponds and streams, and there were wild fruits growing in the forest. There was a genuine spirit of independence among the people, a spirit of self-reliance and confidence, with which every difficulty was met, and, so far as practicable, overcome. It was the best kind of a life to promote that individual development of character, that spirit of self-reliance which constitutes the best type of manhood.

The art of agriculture is the most ancient known to man, whether civilized or barbarian. Earliest history accords it a place among the most honorable of employments. Among the ancient Romans it was not considered beneath their dignity for Senators to engage in this employment. The example of Cincinnatus, who left his plow to guide armies in the field, returning again after victory to his peaceful pursuits, has ever been applauded as one of the most noble on record. Virgil, nearly two thousand years ago, in his "Georgics," gives specific directions for the cultivation of the soil. He tells us that we should plow in early spring; that a four-fold plowing will find its reward; that we should not fight against nature, but understand the soil. That we should give proper attention to drainage. He gives specific directions for the care of domestic animals, and the rearing of fruits, and glorifies the life of the husbandman as follows:

"O, husbandmen, too dear to Fortune, if they know their own blessedness! For them of herself, far from the clash of arms, all-righteous Earth pours from her soil an easy sustenance." * * * They have "repose without a care, and a life that knows not what disappointment is, a life enriched with manifold treasures * * * the lowing of oxen, and soft slumber beneath the trees are theirs, with them * * * is a band of youths inured to toil, and accustomed to little; the sacred rites of Heaven, and reverend sires: Justice, as she departed from earth, planted among them her latest footsteps."

The importance of agriculture to the development of the State was fully understood and appreciated in the early days in Michigan by those in official position. In the message of Governor Mason, in January, 1838, among other things, he says:

"The character of industry upon which the real prosperity of the State is most dependent, is the cultivation of the soil. Most nations have considered it their policy to encourage some particular branch of industry, as the one from which they could derive the most abundant resources of wealth. But whilst the true policy of a free Government is to extend equal protection to every department of trade, we are too apt to overlook the interest of the agriculturist. Michigan, it is true, may and will exhibit an important field for successful domestic manufactures, but the cultivation of her soil must at all times be regarded as the great source of her prosperity. It furnishes not only the means of human subsistence, but supplies materials for manufactures, as well as the chief resources of commerce. Whatever encouragement, therefore, we secure for the agricultural interest, extends a benefit to every other department of industry. Agriculture being, then, a primary and most important branch of State economy, it is the duty of the Legislature, not only to protect its members from disproportionate burdens, but to facilitate to them the advantages derived from the researches of science, and the discoveries and improvements of the age. With this object in view, I would recommend the creation of a board or society, whose duty it would be to foster and encourage this great source of national prosperity and independence, to gather desirable information, and at the public expense, distribute it to the farmers of the State. Such a measure, I have no doubt, would in a short time be productive of important public consequences."

A year later, he again calls the attention of the Legislature to this subject, saying:

"The agricultural interest is one of great importance, and claims with justice the protection of the Government, and yet it has received less aid from direct legislation, than any other de-

partment of industry. But I feel that when it is recollected how essentially the real prosperity of Michigan depends upon the cultivation of her soil and the labors of her husbandmen, the subject will receive your earnest consideration and favorable action."

In the first constitution adopted by the State, which was framed by the convention held in 1835, it is provided, among other things, that "The Legislature shall encourage, by all suitable means, the promotion of intellectual, scientific and agricultural improvement."

The reverses which the people of Michigan sustained, beginning in 1838, when their unsound financial system exploded, and which continued for several years, prevented attention to the subject of agriculture to that extent which its importance demanded. But when brighter days began to dawn, carrying out the policy above suggested—the correctness of which all admitted—there was formed at Lansing, the capital of the State, on the 17th of March, 1849, The Michigan State Agricultural Society. The call for the first meeting of this organization was signed by the executive officers of the State, and members of the Senate and House of Representatives. The first President of the society was Hon. Epaphroditus Ransom, of Kalamazoo, and the first Recording Secretary was J. C. Holmes, of Wayne. Hon. Henry Chamberlain, of Berrien county, was one of the signers to the first call, and acted as secretary of the meeting at which the organization was perfected. Hon. Wm. M. Fenton (then Lieutenant Governor) delivered an address, in which, speaking of the farmers, he says that they are "lovers of their country for their country's sake; when danger threatens our institutions from without, or turbulence reigns within, we can rely upon the aid of such a community to resist every encroachment, and ward off every impending danger. Virtue, intelligence, and that religion which is disconnected with gorgeous pomp and show, animates and inspires them to be jealous of their privileges, and ready to defend, if needs be, their homes, rendered doubly dear by their position, independent, as it must ever comparatively be, of all the world beside."

And in closing, he says:

"If we desire to perpetuate for the benefit of those who are to succeed us, the blessings we enjoy, to erect for ourselves and for after ages, the most enduring superstructure of a free Government,

beneficent laws and institutions, let us unite, one and all, in fostering, encouraging and promoting by every means in our power, the improvement of our system of agriculture, knowing that upon that for its base, and upon that alone, can our superstructure securely rest."

General Lewis Cass, whose noble patriotism and statesmanship were so prominent in shaping the destinies of Michigan, recognized fully the importance of agriculture in its influence upon the welfare of the State. In an address delivered by him before the Kalamazoo Agricultural Society, in October, 1850, he says :

"We have assembled here to-day to commune together, upon one of the great departments—the greatest indeed—of human employment."

Also, "He who puts his hand to the plow, and does not look back upon more brilliant but less useful employments, will not fail to find his reward in a happy and honorable life."

In this connection I desire to make a still further quotation from this address, to show the broad and intelligent views which he entertained concerning education in connection with agriculture. He says :

"There is one great error, to which public attention is now directed, and which ought long since to have found a corrective, and that is the too prevailing impression, that education, at least to any considerable extent, is unnecessary for those who intend to devote themselves to the pursuit of agriculture. And in this connection, that some of the other professions are more respected, if not more respectable, than is the life of the independent farmer.
* * * A more unreasonable and unjust prejudice than this, for it cannot be dignified with the name of opinion, it would be difficult to find in the whole circle of human errors. This class of our population are the natural guardians of our republican institutions: sentinels in safety, defenders in danger."

Gen. Cass also delivered an address before the Michigan State Agricultural Society in Detroit, September, 1851, in which he speaks of labor in the following language :

"But in the natural, as in the moral world, the system of creation is one of compensations—good and evil go hand in hand together. Where man lives without exertion or industry, he lives without virtue or intelligence, and dies as indifferent to the future as he has been to the past. But where necessity—his real friend, though sometimes apparently a stern one—requires him to labor, he attains his true position, and fulfills his true destiny by the

proper employment of his faculties, physical and moral, and by their nobler development, which is sure to follow."

Among the first acts of the State Agricultural Society was the proposition for an agricultural school, and from this idea ultimately grew the present State Agricultural College. Hon. Bela Hubbard took an active part in encouraging this "aid to agriculture," in a report which he made to the society in support of a resolution offered by him, in the following words :

"Resolved, That our Legislature be requested to take such legislation as shall appear necessary or expedient for the establishment of a State central agricultural office, with which shall be connected a museum of agricultural products and implements, and an agricultural library, and as soon as practicable, an agricultural college and a model farm."

Step by step the people of Michigan enlarged upon this idea, until the Agricultural College at Lansing became an established fact. I shall consume no time in speaking concerning this college, as its able President will do that subject justice in the address which he delivers at this celebration. I will remark, however, that it is an institution of which not only the farmers but the whole people of Michigan may well be proud ; and it is one which should receive their encouragement and support upon every proper occasion. Like all other human institutions, it is capable of misdirection, but the mission is a noble one, and, intelligently pursued, will give in the future, as it has in the past, most excellent results.

The State Agricultural Society, organized to aid in promoting the best interests of agriculture and its kindred arts, has done much towards fulfilling the end of its creation. But it has not done as much as it should have done. It has not at all times received the support which it should have received. It has not at all times been managed with the wisdom requisite to insure best results. Yet, with all its errors and shortcomings, it has been one of the most useful institutions in the State. Its annual fairs and the reports of its officers have from time to time called attention to agricultural topics, and thus promoted the end in view. Its true purpose is educational ; and in this respect, like other educational agencies, if it educates wisely it is useful. The object of all education is to make men wiser, to teach them the proper use of their faculties, and to enable them to live in greater comfort

and with less labor. The State Agricultural Society has done much in showing the farmers of Michigan how they may better their condition by the raising of improved breeds of stock, and by the use of improved methods of work and better kinds of machinery. Its managers, as a rule, have worked unselfishly to promote the cause in view, always without remuneration for their services, and often at large personal sacrifice. The farmers of Michigan should be so deeply interested in the welfare of the Society that they will not permit it to be diverted to unwise ends.

And tending in the same direction are all our local agricultural societies. It was formerly the practice for the county societies to report to the State society—a practice which might wisely have been continued, and to which it would be well to return.

I think it would be wise, also, to have the State Agricultural Society reorganized, by a legislative act, in such manner as to more evenly distribute the membership of its executive committee throughout the State. There has been in the past a tendency to localize the State Fair and the efforts of the State society. If its executive board were distributed so that there were two members in each Congressional district, and if its number were limited accordingly, all parts of the State would then be better represented, and the expenses of the management of the society would undoubtedly be very much lessened. The expense of holding the fairs has been so great of late years that large receipts were necessary to pay the bills. I fail to see any advantage to the true object of the organization in the aggregation of such large numbers of animals of the various breeds, and I think it would lessen the expense of the fairs very much if the number were judiciously limited. It is only the better animals of the various breeds that are desirable for exhibition. The State Fair has been used too much as an advertising medium at the expense of the society. Too often, under the pretense of a necessity to put money in its purse, the society has resorted to trials of speed upon the track, with a view of creating an excitement in the community, which would fill the grand stand. The breeding of good horses, such as farmers require for their own use, and such as the market will demand from them at a profit, is useful, and the best efforts in that direction are worthy of encouragement. But the experience of the world is that the breeding of horses for speed alone is valuable mainly in giving pleasure to those who seek the

excitement of the race-course, rather than in giving support to the cause for which the State Agricultural Society was formed.

In considering subjects of this nature we are too apt to lose sight of the fact that, no matter what the occupation in which one is engaged, he is still a man, possessed of all the attributes of the race, its weaknesses and its errors. The pursuit of agriculture is rather ennobling and purifying, is less beset with temptation, and more free from vice. The contrast is often mentioned: The vices of the city, and the virtues of the country.

The most prominent and successful business men of the cities were country boys. From the country they inherited and acquired that vigor of constitution and that habit of independent thought, that self-reliance, which are necessary to the success of all business men. The wear and strain upon the life of a business man in the city at the present time cannot be endured except by those who are blest with strong physical constitutions, as well as with great mental vigor. It is not pretended that all are equal in these respects, even though born and reared under like circumstances. While it is true in this country that all men are equal in their political rights, it is not true that they are born equal in their capacities, in their physical vigor and mental endowments. The inequalities which exist in these respects cannot be remedied by legislation. They are inherent conditions, and must be submitted to by men in all stations of life. It is unwise to contend against the inevitable. Very many of the evils of which men complain at the present time arise from these inequalities which no human wisdom can remedy. If the activities of the race are properly directed these inequalities will gradually grow less. All men are not equal in their capacity to earn money and accumulate property. We are taught by the political economists—or, at least, by some of them—that labor is the source of all wealth. And many of the troubles in the business world of to-day arise from the acceptance of this heresy. I agree that the production of wealth calls for labor, but labor alone does not necessarily produce wealth. Labor must have intelligent direction to produce wealth. It must be aided and reinforced by the bounteous and beneficent earth, by the changing seasons, by the rain and the sun, in order that beneficial results may follow. The man who carries a stone up a hill merely to roll it down again, may continue his labor all his life without adding to his own wealth or to the wealth of the

world. The capacity of men to earn money, then, depends not only upon their physical endowments, but also upon their mental qualifications. Intelligent direction to labor is what makes it valuable. Every man of observation and experience knows that, for example, in one hundred laborers the best ten men will earn more money than the poorest twenty. This is a truth which every laborer should appreciate. And he should have just and fair compensation, not only for his physical exertions, but for his mental guidance as well. In other words, it is his inheritance to have his fair share of the wealth he aids in producing, and it is not the right of his weaker or less fortunate co-laborer to be put upon an exact equality of wages with him.

When the laboring men fight against these laws of nature they simply waste their strength and injure themselves. Like one who beateth the air, he fatigues himself but injures no one else. Unfortunately, however, many of these so-called labor agitators, in their efforts to demonstrate their false theories, not only injure the men who follow them, but they injure the entire community.

Human efforts should be directed not only to the satisfaction of man's physical necessities, but also to the cultivation of such a frame of mind as will make men satisfied with their surrounding conditions, wherever those conditions cannot be improved. The prayer of the ancient philosopher, "Give me neither poverty nor riches," has been the aspiration of the wise in all ages. Great wealth is not desirable. Ordinarily it brings little real happiness to the possessor. But independence is desirable. Great wealth in the hands of good and wise men confers upon its possessors great responsibilities and cares, for the ultimate good of their fellow men. But in the hands of unscrupulous and dishonest men the power of great wealth is a tremendous influence for evil and oppression.

The accumulation of large fortunes during the present generation has been exceptional and extraordinary rather than otherwise. But it is so natural in man to love wealth for the power it brings, or to enable him to shine more brilliantly than his fellows, that he easily falls a prey to the temptation of making money, simply for the power and prominence that it gives him. This is an evil which might be modified by wise legislation. But the wise legislator will be content with partial remedies, when the people for whom the legislation is designed are not prepared to enforce a

perfect cure. He considers the condition of society where the legislation is to operate, and frames his laws in such a way as to produce the greatest practical good. He is an impracticable legislator who undertakes to set up the standard of absolute perfection, when it cannot be enforced among the people. Truths beyond the capacity of a generation are lost upon that generation. But it is wise to utter them; it is well for the world to have them promulgated. But their effect must be looked for in future generations. It is as true now as ever before that people having eyes see not, and having ears hear not.

One truth which ought to be impressed upon all men with great vigor at the present time is that wealth does not necessarily bring happiness. Another is, that the happiest people on earth are those who live simply and purely and are content with their surroundings. The world has advanced wonderfully in many directions. But it was understood in the days of Solomon as well as now that all these things are vanity.

The life of the farmer affords more opportunity for contemplation upon these subjects, and for just conclusions concerning them, than any other employment. His mind is more free from care—assuming, always, that he confines himself to the legitimate pursuits of his occupation. The farmer who makes haste to be rich, who, learning of the fortune which some man has made upon the Board of Trade, mortgages his farm and sends his money to a broker for investment, has gone outside of his legitimate pursuits, and usually finds not only great disquiet, but loses his farm and ruins all his earthly expectations. In this respect legislation might be wise to prevent men from injuring themselves. Laws against gaming have been enforced with good results. Laws might be passed, and should be passed to prevent all this unnatural kind of business, which is nothing more nor less than gambling. Legitimate commerce should be encouraged by all appropriate means. But as well call it commerce to bet on the turn of a die as to bet upon the turn of a market. Gambling with cards or dice is safer even than gambling in these “bucket-shops” or other similar institutions. With the cards or the dice there is always some element of chance. But in the other case the lambs are always shorn. It is said that there are over 3,000 stock brokers in the city of New York, who have an annual income averaging not less than \$10,000 each—\$30,000,000! Where does this

money come from ? From the silly lambs in the country, who, in their unwise haste to be rich, enable these brokers to live in luxury. How much better it would be if this money were kept at home and judiciously expended for the promotion of the comfort and happiness of the people. The country is being constantly drained to the cities. Farmers should remember this fact, and be careful to so conduct their own business that they individually may not contribute to this depletion of the country for the advantage of the city.

It may not be wise to limit individual acquisition. But the evil of great accumulation of wealth would be lessened if it should be provided by law (as it may be, without violation of constitutional rights) that estates should be distributed so that no one person should receive from the estate of a deceased person more than a certain sum to be named in the law ; any surplus to go into the common treasury for the common good. But the incentive to acquisition should not be taken away, for that is the mainspring of business life. And yet the power of acquisition to an extent which gives power to do the State's mischief should be lessened. That State is in best condition which has no paupers, and no citizens possessing sufficient wealth to endanger public good.

We have a system of common schools, each of which is growing and aspiring to become a university, in which the people of the State take great pride, and justly so. The motive which prompts the community to support these schools without expense to the pupils is a most worthy one. It may well be doubted, however, whether greater good might not be accomplished if these schools were more thoroughly practical in their teachings. That education is best which gives the best practical results. Great fears have been expressed lest sectarianism be taught in our public schools, and in the effort to avoid that avowed evil I have sometimes thought that the opposite extreme has been reached. The education of the children in the public schools is confined purely to the development of their intellect, without reference to the training of the moral faculties, which are to give direction in life to the powers of the intellect. Knowledge is power. But it may be power for evil as well as for good. All depends upon its direction. And whether intellectual development is a good or an evil depends upon whether it is guided by correct moral principles into proper channels. Children should be taught to be good as

well as intelligent. And that teacher who omits moral training from his course omits the element which is to determine whether the result of his teaching will be useful or otherwise. There is no danger of promoting sectarianism in following out this suggestion. There is a wide range of moral principles in which all good people agree; and if these are observed the disputed points may be omitted without danger.

No man is well educated who does not know how to make a living, by availing himself of his own capabilities and the forces of nature about him. If those who complain that the labor market is overstocked, and that they cannot find employment with which to support their families, would avail themselves of the opportunities abounding everywhere throughout this State, for seeking their sustenance and independence from the soil, they would greatly promote their own interests. While it is true that the more intelligent farmer always obtains better results, yet it is also true that mother earth is very kind, and grants even to those of little skill and little knowledge sufficient to supply actual want. No man is so ignorant but that with willing hands he can obtain comfortable sustenance from the land. And, fortunately, as yet, land is in such abundance throughout this State that none who are disposed to labor in that direction are unable to obtain its use. The farmers and all others must learn to be content with enough.

The trouble with the country just now is that there are not markets enough to take the surplus. Our manufacturing industries are so varied and extensive, and the products are so numerous that we have a surplus. Our soil is so productive that we have a surplus of cereals; we have a surplus of meats. Although complaint is made of stagnation and general depression in business, in fact, everything is in surplus, except markets. A few years since, the country west of the Mississippi took from the farmers east its supply of breadstuffs. Now more than half of the cereal surplus of the country is produced west of the Mississippi, and probably not one-sixth of the capacity of that territory has been called upon. What are we to do with this surplus? Will farmers ever see the day again when they will get a dollar a bushel for their wheat? We must all learn to be content with enough, and not strive to go beyond it. And those people who complain of the dullness of the labor market must seek inde-

pendent livelihood upon the farm if they would seek their own good.

No State in the Union, no place in the world is better fitted for independent life than Michigan. Everything may be produced here necessary to satisfy reasonable desires. Fifty years ago the country was anxious to encourage manufactures and production, so that in case of foreign war the people would not suffer for the comforts of life. We have passed that stage now. Everything necessary for the comfort of life is produced in abundance among us. And in our anxiety to become wealthy, to secure great accumulations, we are reaching out to the world for markets. If these markets fail to come we should be content to enjoy our abundance.

Our Government is formed upon the theory that every individual is to have the greatest opportunity to secure and promote his own happiness, always within those rules and regulations which society has prescribed, to prevent improper interference with others. Individual development, individual opportunity has made this country what it is. We started out with the theory that power was inherent with the individual, and that Government had such powers as were conferred by the common consent of the individuals to be governed. This theory was not in accord with that which prevailed in the old world. All power there was vested in the crown, and what power individuals possessed was such as had been conferred upon them by the crown. The theory of the old world tended to throw society into classes. As the crown dispensed its favors, powers were exercised by one class or another, according to the bounty of the sovereign. But here, where every individual stands before the law equal in civil rights, society should never be forced into classes. Every attempt so to do is at variance with the whole theory of our government. The organization of one class as a laboring class, and the organization of another class as employers is greatly to be deprecated. We have set out upon the theory that man is capable of self-government, and it is a duty which this generation owes to posterity to take no step backward. One hundred years and over of our governmental experience have passed, and so far it has proved a success. Upon the people of this generation it depends whether it shall continue such. Do not permit these ideas of classifications in society, imported from the old country, to be introduced here.

Let it be understood distinctly that every individual is to stand upon his own merits, upon his own virtues, upon his own capacities.

There is no class in the community to which attention is directed with so much hope for the preservation of our institutions as to those engaged in agricultural pursuits. Let them cultivate practical education, the spirit of individual liberty, and the development of individual self-reliance and self-respect. Let them encourage respect for the law, which is only the expressed will of the whole society, the observance of which is so essential to the peace and safety of all. The past lies behind us and is safe, the present is in our control, and the future depends largely upon the example which we set for those who are to follow us. If we see to it that the principles I have announced are commended to those who come after us we may lay down our burdens with the assurance that the future of the State is safe.

MICHIGAN HORTICULTURE.

A resumé of its progress, and notes concerning its connection with our prosperous condition, and suggestions about its impress upon the future homes of our State.

HON. CHARLES W. GARFIELD.

The man of wealth or learning who has secured his acquirements through long years of constant adherence to his purpose, and has won success and renown in the face of serious difficulties by means of sacrifices which taxed to the utmost his powers of endurance, delights to recall, occasionally, and with a wholesome pride, the great obstacles overcome, the triumphs attained, and will, for the amusement of his auditors, unfold at times, failures that in the perspective have a ludicrous aspect, but which render more complete the progressive steps to a worthy success.

So we to-day, in hastily reviewing the facts and incidents connected with the pioneer attempts in the field of Michigan Horticulture, may be justly proud of the rapid strides taken in the face of astonishing difficulties, and can smile at the errors and trials, which from our point of view, scarcely checked the onward movement, but which, when experienced, looked like mountains

in the way of success. In the hands of the past we will find tightly grasped the key to unlock the future. The strength attained in overcoming serious difficulties, is that to be employed in climbing to greater heights of success.

The pioneers who came to our part of the great Northwest Territory, in their beginnings, had little thought of horticulture, pomology or floriculture. They had to deal immediately with a great forestry question. The problem of how soonest to turn the great trees into ashes and gases, so as to let the life-giving sunlight have an opportunity to touch the soil and quicken to life the germs that would give the largest amount of simple food to maintain the strength for wider clearings and broader life. They at once absorbed the notion, and acted upon it, that the axe and torch would pave the way to the most satisfactory acquirements, an idea that has been bred so thoroughly into the generations that have followed them, that the argument of approaching sterility of soil and consequent poverty of possessions will alone eradicate it.

The pioneers found fruits of certain kinds growing in abundance without the "Art which does mend Nature." Grapes, plums, crab and thorn apples, gooseberries, huckleberries, raspberries, blackberries and elderberries were well distributed over our peninsula and served to give variety to many a meal for the early settlers, which otherwise would have been confined to a narrow range of substantials. Vegetables were less abundant; but I have been told that in the absence of any garden products, the forests afforded a few things that were utilized, prominent among which were the wild onion and leek, while from the brooks were gathered abundance of cress. Occasionally a pioneer will now laugh at any early experience in testing the quantities of the wild turnip,—an experience of which a very little goes a great ways.

THE BEGINNINGS.

It may not occur to many of our people that the horticulture of Michigan may have had its beginning as early as that of Massachusetts, as the French Jesuit missionaries visited Detroit the same year that the Mayflower landed its pilgrims at Plymouth Rock. From the old French records we gather that it was the custom of the early Jesuit missionaries to leave at the points at which they touched, as they paddled their way along the borders

of our great inland waters, some mark to record the path they traced in the unknown world. There would be no benevolence to future travelers to dig a well, as did the patriarchs of old, but they could plant a tree or scatter a few seeds of apples and pears that would mark their camping grounds for generations; and while recording the adventurous spirit of these daring men, would be emblematical of their purpose to scatter the "seed of the Word" among a people whom they hoped to lead to a knowledge of their God.

In the very early records of the missions established by the French, are references to the trees planted; and the old apple and pear trees mentioned in the early sketches of Detroit, Michilimackinac and the Sault Ste. Marie, indicate that the climate of Michigan with reference to pomology had a test at a very early day; and the great age to which the first plantings of trees attained, and their productiveness, indicated strongly the possibilities of the future in the growing of fruit. The plantations of apples and pears made on both sides of the Detroit river or at "D'Etroit," the straits, as it was then written, were very productive in fruits, and as this was on the line of travel of many of the tribes of Indians, who each autumn took a trip from our peninsula to English and French stations in Canada, it is not singular that fruit trees sprang up along their trails, which are mentioned in the early records of the country about Pontiac and the Saginaw Valley as old and productive trees when first the white man penetrated the wilderness of these regions. At Monroe the items of history as connected with the old pear trees that have rendered this city famous have been woven together by Hon. Edwin Willits (see Michigan Pomological Report, 1874, p. 351), who found that these venerable trees grew from sprouts taken from a famous tree at Detroit, which was planted in the latter part of the seventeenth century. Wherever these old trees were planted they grew thrif- tily, were healthy and produced enormous quantities of fruit.

Prof. J. C. Holmes in a paper read before the Michigan Pomological Society, records that William L. Woodbridge upon whose farm some of (see Michigan Pomological Report, 1873, p. 337), these trees stood, had repeatedly gathered from single pear trees a crop of fifty bushels of fruit.

THE FIRST SETTLERS.

Immediately after the war of 1812 the emigration from the East to our State really began; and of the men who sought to establish homes in Michigan between 1820 and 1835 a majority were from New York and New England; they were people who had known in their eastern homes the value of orchards and gardens; and while their wives were willing to assist in burning the brush and performing such other labor as they could in hastening to enlarge the openings in the vast forest, they did not forget the flowers and vines which adorned their eastern homes, and quickly embellished the log houses with such attractive features as a knowledge of horticulture could suggest. In every part of the State I have found reminders of the taste and good sense of these pioneers in rendering their homes attractive. And many a beautiful residence is given character and individuality to-day by the trees and vines planted by the wives of these pioneers. Living as I do upon the oldest farm in Kent county, I keenly appreciate the thoughtfulness and the generous heart of Mrs. Burton, the first farmer's wife of this county who, with her own hand planted larches and walnuts, which to-day are not only the pride of our family, but of the locality.

BRIEF LOCALITY NOTES.—DETROIT.

The first plantations of orchards of any account in our State, were made at Detroit, from stock secured across the river, the stock having originally come from France to Montreal, and progressed westward with the settlements. The varieties were Fam-euse, Pomme Grise and Red and White Calville.

Governor Woodbridge made the first large importation of orchard trees about 1825, the stock having been purchased of Grant Thorburn of New York. In 1830 he bought a large consignment of small trees of the leading varieties then known in New York, and shipped from Buffalo by a schooner, which was frozen in on its way and consequently the stock destroyed.

There were about 2,000 of the trees first purchased, and they were put into two orchards. Among the varieties of apples were R. I. Greening, Baldwin, Esopus, Twenty Ounce, Early Harvest, Belle Flower, Roxbury, Russet and Fall Pippin.

In 1833 Wm. L. Woodbridge, son of Governor Woodbridge, established a small nursery.

MONROE.

Perhaps no locality in our State has a so well preserved record of early orchard tree planting as Monroe. Here stand, side by side, trees planted in each decade for a century. Each French settler, as soon as he erected his cabin, planted a few sprouts of fruit trees. They were not orchardists; no large orchards are found upon any of the early French farms—and judging by the productiveness of these old apple and pear trees, there was no need of many trees to supply a family with fruit. The old pear trees here do not bear choice dessert fruit, but an abundance of it, and especially adapted for culinary purposes. Mr. Willits, in unfolding the early history of these trees, found that the first were planted by Francis Navarre in 1780. Numbers of trees are now standing of which authentic record has been preserved, that were planted before 1800. In a number of yards may be found trees planted very soon after the war of 1812. On the farm of S. M. Bartlett, Mr. Willits found, in 1873, an apple tree, the companion of which had been blown down and the rings of annual growth counted, indicating that these patriarchs were planted about the middle of the last century.

WASHTENAW COUNTY.

French traders came out as far as Woodruff's Grove, now Ypsilanti, very early in this century, and there are a few fruit trees standing to-day as relics of their visits. Apple trees are standing in Ann Arbor planted as early as 1825; but the earliest orchard of which we have record was planted in 1829 by Oliver Whitmore, a record of the varieties having been preserved to this day, written by Mr. Whitmore at the time of planting.

A small nursery of fruit and locust seedlings had been planted by Deacon Israel Branch in 1825, which passed into the hands of Elihu and Augustus Mills the following year.

In the fall of 1826 Hon. Horace Carpenter says, that himself and father came to Ann Arbor and brought one half bushel of apple seed which was planted on a half acre of land, from which 6,000 trees were sold during the following four years.

In 1833 E. D. and L. K. Lay located at Ypsilanti and brought with them 20,000 cultivated fruit trees of all classes, erected a small greenhouse, and soon supplied a large region of country

with orchard stock. This was the first general nursery in the State. Others had planted a few rows of seedlings and possibly there were, in a small way, grafted trees grown, but the Messrs. Lay started a stock that included all the leading sorts of the day. By 1840 they were so thoroughly established as to issue a full catalogue of forty pages.

LENAWEE COUNTY.

The following note kindly sent me by Prof. R. C. Kedzie of the Agricultural College, gives a brief account of the very earliest attempt at fruit growing in Lenawee county. He writes: "My father moved into Michigan territory in May, 1826, making his home on a farm of 300 acres on the bank of River Raisin in the eastern edge of Lenawee county, now known as Deerfield, but for a long time called Kedzie's Grove. Having cleared off the woods from a part of his farm, he set out a small apple orchard with trees obtained from Monroe; mostly natural fruit, but a few trees of "grafted apples," a variety probably local in Monroe, which I have never been able to identify with any recognized variety described in books. He also set out in the "door yard" a number of trees of the Kentish cherry, a row of red Dutch currants and some native blackcap raspberries along the big oak log that made part of the garden fence. He planted peach pits from which we soon had a supply for ourselves and neighbors—a big crop every third year, with light crops intervening. He sowed apple seeds and started a nursery of about half an acre, which produced vigorous seedling trees, from which sprung many of the orchards in the southern side of Lenawee county.

Farmers with their ox teams came from Adrian, Bean Creek and Palmyra to get a load of these trees to start an orchard. The price of a thifty tree seven or eight feet high was a York shilling ($12\frac{1}{2}$ cents), and usually the payment was made in Spanish quarters, the most abundant silver change of that day. For plums we depended upon the wild varieties which grew in abundance on the banks of the river and on the small prairies.

Our grapes were the wild grapes that grew so abundantly on the banks and bottoms of the river as to give the name "Raisin" to that tortuous stream. I never knew any raisins to be made from those grapes, for they were for the most part of the "fox" or "frost grapes," which only ripened after the action of a sharp frost, and even then were very sour.

Orchards of some size, of both apples and pears, were growing in Frenchtown (Monroe) in 1826, and produced a fair supply of fruit. I well remember that *the* event of the year was when my older brothers took a load of corn or potatoes to Monroe (25 miles away) to exchange for a load of apples, going one day and returning the next. The roads were poor and traveling slow, and it was often midnight before the wagon with its precious load of fruit reached home. Yet there was no rest or sleep in the household till it came, and when it did come, to my young senses, the house was filled with the very breath of Paradise.

My father planted and sewed in hope of a future harvest, but he never lived to see the blossoms or taste the fruit of his planting. Within two years he was called to pluck the fruit of the tree of life that grows beside another stream than our "muddy Raisin."

Very soon after the first plantings at Kedzie's Grove, Darius Comstock and his brothers and the father of Mr. R. W. Steele, settled at Adrian and started orchards with stock brought from Western New York.

JACKSON.

Mr. A. W. Daniels, who came to Jackson in September, 1830, erected a log house on the land which his father, John Daniels, had located. This farm is on the old territorial road just out of the city limits. This was the first farm in the county. He purchased a yoke of cattle in Detroit, came to Ann Arbor with them, then hired a wagon and loaded it with provisions and farming implements and came to Jackson. Subsequently his father, John Daniels, sent him some fruit trees from Bethany, N. Y. He had to go to Detroit for them, and on returning, got stuck in the mud in crossing Grand River at the ford. He was obliged to leave the wagon mired until the next day, when he obtained assistance to bring it out of its Stygian bed, with its precious load, which was to be the beginning of fruit growing in this locality.

In 1834 Timothy W. Dunham brought in a chest of drawers, a lot of root grafts and planted them out in the township of Sandstone. The following spring these were sold to T. E. Gridley and were the formation of the extensive orchards afterwards planted by this pioneer horticulturist.

EATON COUNTY.

A colony of Vermonters settled in Eaton county in 1836, and founded the town of Vermontville. Oren Dickinson planted the first apple seeds, from which he planted an orchard that to-day is thrifty and fruitful. E. W. and H. C. Barber planted from this same lot of seedlings an orchard which is now owned by Hannan Dickinson.

A relic of a plantation of trees made in 1838 by Jay Hawkins, stands in front of the residence of Dr. Palmiter, in the village. Other orchards were started very soon after these in Bellevue, by Sylvanus Hendricks; in Hamlin, by Amos Spicer and John Montgomery; in Delta, by Erastus Egbert and Harlem Ingersoll.

KALAMAZOO.

Enoch French planted a few apple seeds in 1833, but two years later Timothy W. Dunham, who had previously made a start in Jackson county, came to Kalamazoo with grafts and seeds, with the intention of starting a nursery on the plan of those at Rochester, N. Y., with which he had long been familiar. His efforts were carried out with success. For several years he took the trip to the East to renew his supply, at a large expense for those times, and in a few years supplied a large area with trees.

BARRY COUNTY.

Early settlers who came into the Grand River valley by way of Kalamazoo, will remember the first plantation in Barry county, at Yankee Springs, made by "Yankee" Lewis. He had a fine garden which was on the site of what is now the most extensive orchard in the county.

INGHAM COUNTY.

The first apple trees planted in Ingham county were set in the town of Stockbridge by David Rodgers in 1835. In 1836 he planted peach pits, imported from New Jersey, which proved to be of the variety known as Red Cheek Rareripe, which reproduced itself from the seed. Other orchards were set in the same town in 1838.

CALHOUN COUNTY.

Robert Church settled on his farm two miles east of Marshall, in 1836, and immediately cleared off a field of six acres and put it into an orchard. The trees were obtained of the Messrs. Lay, of Ypsilanti. Very soon after Mr. Church planted apple seeds and started a nursery.

GRAND RAPIDS.

The very earliest history of horticulture in the Grand River valley below Jackson, is connected with Grand Rapids as a French trading post. Louis Campau, previous to 1834, had improved a piece of land extending from what is now the corner of Monroe and Waterloo streets to the river bank, which was not far off. This was a vegetable and flower garden, and occasional fruit trees and ornamental shrubs scattered through it. The most attractive thing about it was the flowers, and I have often heard "Uncle Louis" tell of the delight of the early settlers and Indians in traversing his garden from the canoe-landing to the curved path to his house. An old canoe answered for a propagating bed.

It was in June, 1834, that the Reed family came to Grand Rapids and settled on the bank of the lake, east of town. After having forded the river to get some material for their house, one of the boys (Osmand Reed, now of Cadillac) espied some seedling apple trees in the corner of Uncle Louis Campau's garden and adroitly filehed a handful of them, planting them on the new farm, where they now stand as monuments of the early days.

About the year 1835, Mr. Abel Page moved to Grand Rapids and located on the bank of the river near the foot of Huron street; Mr. Page and John Ahny started gardens, planting in them such things as they brought from the East, and could get through the mail from friends, in the form of slips and seeds. They also made selections from the woods. It was in Mr. Page's river garden that the first tomatoes were raised in the Grand River valley. They were simply curious ornamental plants, called, then, "love apples." The only man in the country who would eat them was the schoolmaster, and he was accounted a lunatic. But the early settlers were all largely indebted to

Uncle Louis Campan for their first things planted, who grew nothing to sell, but always gave with a generous hand.

From the most authentic record I have ascertained that the oldest apple tree standing in the county is the one under which I swing my hammock in summer, and which shades the west side of my house. This is from seed planted by Barney Burton in 1833.

MT. CLEMENS AND ROMEO.

The first fruit tree planting in Macomb county was done by Moravians from the Muskingum valley, in Ohio. These must have been set over a hundred years ago. Some of the trees are yet standing, and are of kinds unnamed in our present catalogues.

Among the early planters was Mr. Lazarus Green, in Washington township. He planted peach pits as early as 1825; and a part of the orchard now standing on the farm upon which he settled, was planted out in 1827. The trees were of his own growing, and brought from Genesee county, New York. Mr. Green for years grew nursery stock from which hundreds of orchards were planted in Macomb and adjoining counties.

PONTIAC.

I am told that what was known as the Sprague nursery was started at Pontiac in 1833, and that from then for some years, trees were taken by the pioneers with which to start their orchards, even as far west as Grand Rapids.

SAGINAW.

After the planting of the old Indian orchards of the Saginaw Valley, the exact age of which is unknown, Mr. Abram Whitney set out the first fruit trees, in the fall of 1833, in section 18 of town 12 north and range 3 east. Others followed soon after, getting their trees from the Sprague nursery at Pontiac. The banks of the Tittabawassee were lined with plum trees, which furnished the early settlers an abundance of delicious fruit. The Indian apple trees were scattered along the river through a number of townships, and always bore great quantities of fruit. In the early history of the county, there was nothing that would predict the wonderful capacity of the soil which has been developed in later years for the growth of market garden products and small fruits.

VAN BUREN COUNTY.

For a scrap of early history in Van Buren county horticulture, I am indebted to Judge G. W. Lanten. Dolphin Morris, in the spring of 1829, settled on Little Prairie Ronde, just inside the limits of Van Buren county. Mr. Jones, who resided on McKinney's Prairie, Cass county, had secured some apple trees from Long Island, and parted with fifteen of them to Mr. Morris, for an equivalent of \$15.00. From the Indian chief, Pokagon, Mr. Morris procured a seedling which bore abundant crops of a very good apple, and was for decades known as the "Old Indian apple tree." In the fall of 1830, in returning from a trip to Ohio, Mr. Morris brought three roots of the Bell Pear and plums and cherries, with a few peach pits. In 1833, neighbors of Mr. Morris, Le Grand Anderson, George Tittle and Mr. Swift, planted out orchards. The first currant bushes were brought in there by Mrs. Tittle in 1830, from Fort Defiance. Now, while their husbands were thoughtful in securing the fruits which would in a few years make glad the families of their households, their wives were not forgetful of those simple but delightful embellishments which flowers and shrubs and vines contribute to the home.

Mrs. Morris grew peonies, hundred-leaf roses and many of the floral treasures, while Mrs. Anderson looked with pride upon crocuses, damask roses, snowballs and tulips of her own growing; and an asparagus bed that was probably the first in the whole of Michigan.

ST. JOSEPH AND BENTON HARBOR.

Any history of fruit growing at the mouth of the St. Joseph river always begins with the peach.

B. C. Hoyt, in 1829, found peaches growing at St. Joseph, but before enough peaches were grown to supply the wants of the early settlers there, they were brought in by the wagon load in 1834, from the vicinity of Niles, by a Mr. Brodiss. The rapid development of peach culture in the locality, I will speak of hereafter. In 1837 the first orchard was planted at Benton Harbor by Mr. E. Morton.

THE APPLE IN MICHIGAN.

The apple is king among all northern fruits; and the climate and soils of our State seem admirably adapted to the production

of the highest types of this fruit. Whether the fruit that grew upon the "tree of knowledge" belonged to the apple family or not, may be a matter of doubt; but were the fruit as delicate and handsome as the apple grown in the many favored parts of our peninsula, it is not strange that the temptation to pluck and taste was not resisted.

A large proportion of our people came from the famed apple region of western New York, bringing with them seeds and trees of the best varieties grown there, and a knowledge of the most improved methods of cultivation. The southern tiers of counties became noted twenty-five years ago for the fine quality of the apples produced there. Other sections have surpassed the products of these orchards of southern Michigan in height of color, but none in quality of fruit.

And as the tide of emigration set northward and it was found that we could grow the most tender sorts of apples, on the line that bounds Vermont on the north, it was learned by experience that varieties grown in the northern latitude, were unequalled in firmness of flesh and consequent keeping qualities. It is a well known fact among pomologists that the varieties of the best quality are of summer and autumn ripening. These sorts grown in the Grand Traverse region, maintain their record of quality and combine with it wonderful keeping qualities, so that a large proportion of the apples that rank as the very best, which are ripened and gone in other apple regions early in autumn are perfectly preserved in this northern country, by the ordinary methods, until midwinter.

The 250 miles of longitude, and a climate tempered by surrounding bodies of water, in which apples can be successfully grown in Michigan, form an apple region unsurpassed in the world. And Michigan has proved by successful competition, the records of which she points to with pride, that the products of her apple orchards have no rivals to fear.

In answer to a large number of letters which I sent out a few years ago, to farmers in our State, who had good orchards connected with their farms, not one, who had any taste for the care of trees but admitted that the orchard, after arriving at bearing age, was the most profitable area of land on the farm.

We have about 240,000 acres devoted to apple culture, in our State, which in a favorable year will produce over 5,000,000

bushels of fruit for export, and furnish a liberal supply for the cellar of each owner of an orchard, and a moderate amount for his less fortunate neighbors.

The fruit of Michigan apple orchards goes into the market in a diversity of forms. Although cider was its only orchard product mentioned in the first Michigan census, we now rank it as a minor product of the orchard. The most thrifty farmers are finding the waste fruit from the orchard a valuable food for swine; the use of which ought certainly to be a convincing argument to our Hebrew brethren, that this class of pork can be neither common nor unclean.

In every well regulated family, no winter evening is perfect without its accompanying dish of apples. Michigan people can all be well provided for from their own trees, and can send abroad with generous hand an abundance for less fortunate brethren in sister States. There was a time when it was said of Michigan,

“ Before a man gets out of bed,
 The doctor peeps into his head,
 And twenty dollars he must pay;
 The doctor 'll have it on that day.
 * * * * * *
 Go there in summer, you will see
 Much sorrow and calamity;
 Some sick in bed, some shivering stand,
 For that's the case in Michigan.”

What has worked this wondrous change by which Michigan's record for health compares favorably with other States? I certainly believe the apple has done a large share of it.

Happy is the man whose home now is in Michigan, who can quaintly say with Marvell,

“What wondrous life is this I lead,
 Ripe apples drop about my head.”

THE PEACH IN MICHIGAN.

Prof. C. D. Lawton remarked to me a few years ago, in something like this vein: “ Peach culture is one of Michigan's recognized industries. In the production of this healthful and delicious fruit, our State ranks among the first; its advance has been rapid, and its recognized prominence is due to a very few brief years of earnest effort. There was a time when fortunes were made in a very few

hours, through the exchange of lands that were supposed to be especially adapted to the culture of the peach. But unfortunately the enchanting hopes awakened by the wonderful successes in the beginning of commercial peach orcharding, have been overcast with the presage of approaching evil. In the locality that first gave Michigan her notoriety in the culture of the peach for market, this fruit is but little grown to-day, and we know not how soon the blighting influence which caused the destruction of orchards here may spread over the entire State."

Since these remarks were made, a more hopeful feeling prevails among peach men. By prompt measures the disease which promised to sweep everything before it, has been stayed, and the hope is born that soon we shall be able to resist its further encroachment.

We must reach back more than a century to find the beginning of peach culture in Michigan. Before the Revolutionary War, a Mr. Barnett sought to trade with the Indians of West Michigan, and touched at St. Joseph in 1775, and left a few peach pits that marked the place of the barter. In 1829 and 1831 the trees from this seed were found bearing abundantly, by pioneers whose names and statements are recorded. With no markets for the product peach orchards were not started by the early settlers except so far as supplying their own necessities was concerned. It was not till 1834, that peaches were grown in sufficient quantities to seek a market. It was Mr. Gaius Boughton and son, Capt. Curtis Boughton, who gave the peach interest of St. Joseph an impetus that resulted in ascertaining the wonderful advantage of the whole east shore of Lake Michigan, for peach culture. The captain bought peaches as early as 1840, and in the most primitive packages, such as barrels and boxes, carried shipments to Chicago.

In 1850 Capt. Boughton's record shows that he took to Chicago from St. Joseph 400 barrels of peaches, which, measured by the present standard, would be about 6,000 baskets.

The growth of the peach interest from this time until 1872 was marvelous. In this year a careful canvass showed 1364 acres in this vicinity, closely planted to peaches; and in 1871 an aggregate of 500,000 packages of peaches were shipped from the ports of St. Joseph and Benton Harbor.

It did not take long for the news to spread northward along the shore, that a congenial home had been found for the peach; and

extensive plantations were made in the counties, reaching even to Grand Traverse.

In 1881 the peach shipments from South Haven aggregated above \$115,000. In 1879 a reliable authority places the income from the peach crop of Allegan county at \$250,000.

One grower, Mr. C. Engle of Paw Paw, informed me that a careful account which he kept of his first peach orchard planted about 1861, for twenty-three years, showed a net income per acre of \$3,200.

No branch of special farming has been so profitable in our State, in the hands of experts, as peach growing.

Nature evidently arranged the conditions so that our State could be a perfect home for the peach. Embraced by the waters of the great lakes that formed a shield of protection from the freezing winter winds, and a mantle of protecting timber evenly spread over the land, the pioneers found that almost anywhere the peach would grow luxuriantly, and bear the same abundant crops of delicious fruit that were produced in the far off Southern clime, where it originated. But, alas, the change which man has wrought by the ruthless elision of our timber, has gradually closed in upon the area of successful peach culture, until now, except upon the heights of ground in the interior, the peach can only be grown upon a limited area next to the Lake Michigan shore; and could the waters of the great lakes be drawn out and sold for money even its protecting arm would wither before the heedless avarice of man.

It is the old story of killing the goose that lays the golden egg.

The advent of that paralyzing disease, the yellows, introduced a new epoch in Michigan peach culture. It swept the industry from Berrien county before its power was known, and invaded the counties northward; but a careful study of the habits of the disease and protective legislation have assisted the growers to meet the destroyer in successful combat. And although to-day little more is known of the cause of the disease than when it first invaded our soil, its symptoms are so well understood and the most approved methods of warfare so thoroughly taught the growers, that its progress is not feared.

SMALL FRUIT.

The small fruit interest has rapidly developed, with a knowledge of how to grow the fruit, and the demand for it in the

growing markets. With the decadence of the peach industry in Berrien county, the small fruit area rapidly increased, until now, there is no place in the whole west that surpasses this region in the growth of small fruit for market. Mr. Morrill is authority for the statement, that it is not a rare occurrence for 10,000 bushels of berries to be shipped from the ports at the mouth of the St. Joseph river in a single evening. Every town in our State is abundantly supplied with berries from the last of May until the first of September.

GRAPES.

The early French *voyageurs* who paddled their way from Detroit southwesterly, following the indentures of the coast, found, as they passed up the river by the site of the present city of Monroe, that every tree was vine-clad, and they thought they had found the native haunt of the grape, and named the stream La Riviere au Raisin (grape river).

The limestone soil of this county seemed admirably adapted to the growing of grapes of the highest qualities; and rapidly the the vineyard interest increased, under the hands of competent growers, until it was the leading industry of this locality.

Viticulture is now a recognized industry in our State, and growers have kept pace with the progress of knowledge in this field, until no farm house is complete without its accompanying bearing grapevines. The culture of the grape for commercial purposes has, under skillful management, been found profitable in every locality of our southern peninsula.

MARKET GARDENING.

The market gardening interest of our State, in the aggregate so enormous, has developed largely within the last twenty-five years. Success in this industry has grown out of the acquirement of knowledge concerning varieties, soils, manures and markets. Near all of our larger cities we find experts, who, upon a small bit of land, grow produce that secures them handsome incomes. And in some localities specialties are followed, which aggregate large profits. This is notably true of the celery product of Kalamazoo, Ypsilanti, Jackson, Grand Rapids and Grand Haven. About Kalamazoo nearly 1,000 acres are devoted to the culture of this vegetable. In many localities what have long

been considered the waste lands in our State, have been utilized by progressive gardeners and made to produce enormous crops of vegetables of excellent quality. I have no statistics at hand to exhibit the amount of investment in this branch of horticulture, or the area devoted to it. But visitors to the towns of our State, who travel over large sections of our country, say that no towns in the United States are so well supplied with a diversity of vegetables and small fruit as those of Michigan.

THE RICHEST PROFITS.

But the most satisfactory profits that accrue to our people of Michigan from the growing of fruits and vegetables is not the amount of money netted from the area planted. The statistics of census-takers do not touch upon the richest returns that the development of horticulture in our State has gathered as a permanency to our people. The cultivation of fruits as affecting a population is not a mere matter of the pocket-book and bank account. We proudly contemplate the array of figures that represent the aggregate sales from the orchards, vineyards and fruit farms of Michigan; yet could we put into some exact form the civilizing influence of fruit as grown about the thousands of Michigan homes, it would make a much grander showing. The moulding influences which determine the character of an individual or people, cannot be measured by figures. Yet they are as real as those which lie at the foundations of great fortunes. That which emanates from a man's brain is closely connected with that which enters his stomach. And the development of the possibilities of horticulture in any community is what gives diversity to a good living, and largely determines the type of the people. The masses have been elevated and refined by the advanced position that our State has taken in matters of pomology and horticulture.

If I may be allowed to put the matter concisely, the most satisfactory income that accrues from the advanced position of Michigan horticulture, may be tallied from the diversity of fruits and vegetables that can be readily grown at slight expense, for the comfort of the households; from the delightful turf that so rapidly takes possession of the area about our dwellings; from the wide range of attractive shrubs, annual and perennial herbaceous plants, and noble trees that may be gathered with success to administer to the satisfaction of the ownership in a home.

CLIMATIC PRIVILEGES AS AFFECTING OUR HORTICULTURE.

Lake Michigan is truly a "cherishing mother" to the orchardist. A body of water 360 miles in length and 100 miles in breadth, it would float the three States of New Jersey, Delaware and Maryland, and is deep enough almost anywhere to bury Mount Holyoke beneath its waves. With its 3,400 cubic miles of water in one great basin, it maintains a temperature that varies comparatively little throughout the year. And this with the other fact that 65 per cent. of our winter winds are from a westerly direction, gives the key to our peculiar success in horticulture. This it is which enables us to grow peaches on the forty-fifth parallel, which bounds Vermont on the north, and ripen figs in the open air on a parallel with Boston, Massachusetts.

This influence, to be sure, is felt most strongly on the border of Lake Michigan, and gives rise to the term "Michigan Peach Belt," but the modifying effect is felt all over the peninsula. This ameliorating influence of the lake was noticed by the very earliest surveyors, in the native flora of the State, and their reports were the first that led to the noting on maps of the abrupt northward curve of the isothermal lines in Michigan.

IMPORTANT EMPIRICAL ACQUIREMENTS.

In a half century's progress in horticulture of our State, almost everything had to be learned. Allow me to state concisely the most important general facts that have been gathered.

1. *Adaptation to a wide diversity of varieties.* Nowhere can we find so rapid transitions of soil as in Michigan. Upon a single farm, of quite limited area, may be found all kinds of land, from the stiffest clay to the lightest sand; and from ground limestone to a bed of muck. So that in learning the special adaptation of varieties to certain soil conditions, it has been found that a fruit or vegetable farmer in Michigan has a great advantage in adapting his sorts to the best conditions.

2. *The wonderful capabilities of our west shore.* These I have hinted at incidentally. The growing of the very tender varieties of fruits so near to great markets, along our west shore, and with little variations of conditions for so great a difference in longitude, as that of St. Joseph and Grand Traverse, is a wonderful acqui-

tion to our State. The peach belt of Michigan has an unquestioned existence and a notoriety that is enviable.

3. *Atmospheric drainage.* It is within the history of Michigan horticulture that the influence of atmospheric drainage upon the selection of sites for orchards and gardens has been brought to the front; and the facts which show that valleys are not snug, cosy, warm places for tender fruits, and that high ground sloping so as to allow the cold air to settle away quickly, is the safest place to locate sites for fruit and vegetable culture, especially of the varieties which most readily suffer from the effects of frost, have been brought out by Michigan pomologists. The observations and experiments of the fruit growers of Michigan have done more to spread the knowledge of these facts and impress them upon planters than all other means combined.

4. *Forest protection.* We have been learning by the most expensive methods the wonderful influence of a proper distribution of forest growth, and the dire consequences which follow the wholesale destruction of standing timber. The horticultural literature of our State is strongly impregnated with facts bearing upon this subject. We are learning that the great lakes are not the only elements in our environment which modify our climate and render us better off than our neighbors in facilities for the prosecution of the more delicate branches of horticulture.

Whether we profit by the knowledge, remains for the future to develop. There seems no stay yet in the ruthless destruction of forest growth, except the condition of the lumber and wood market. If the horticulturists of Michigan could speak persuasively, they would call a halt and shout to the timber slashers that "there is danger ahead." I certainly trust that the argument of facts may have an influence where it will be felt, to stay the progress of a method that will surely result in a limited horticulture.

5. *Market facilities.* Certainly as far as markets are concerned we are highly favored. The rapid development of the great Northwest by a people who have an appreciation of the value of horticultural products, added to the fact that only the very hardest (which are usually poorest in quality), of these products can be there grown, places Michigan in an unique position with reference to the unloading of her surplus fruits. The great distributing markets of Chicago and Milwaukee are at her doors, with the most ready transportation at hand. The benefits to be derived

from these conditions, to the market growers of Michigan, can hardly be overestimated.

HORTICULTURAL ORGANIZATIONS.

As early as March, 1841, a few enthusiastic horticulturists of Detroit met and organized the Detroit Horticultural Society. The names of William Adair, Prof. J. C. Holmes, M. Howard Webster, Bela Hubbard, G. V. N. Lothrop, Thomas Hall, John Ford and Wm. B. Wesson figured prominently in the earlier proceedings of the society. For years this association maintained a strong organization, holding regular meetings for discussion, and the exhibit of fruits, vegetables and flowers.

The smaller towns tributary to Detroit joined in swelling the membership and exhibits. The last meeting of the society was in 1853.

In 1851 the Adrian Horticultural Society was formed and has maintained itself until now, in good working condition. A few years ago it widened its name and boundaries, and is now known as the Lenawee County Horticultural Society.

The first State organization of this character was called together for organization at Jonesville, Hillsdale county, and started out under the title of the Michigan Nurserymen and Fruit Growers Association, in September, 1853. An adjourned meeting at Adrian the following February completed the organization, and its first officers were J. C. Holmes, Detroit, president; J. T. Blois, Jonesville, secretary. The society did some good work but died an untimely death in 1856.

Regarding the next venture in the way of organization, Prof. Holmes says: "The Nurserymen and Fruit Growers Association having been winter killed, and there being a call for an organization of similar character, in September, 1857, a meeting was held at Jackson, with T. T. Lyon of Plymouth as temporary chairman and V. B. Merum of Moseow, as temporary secretary."

At this meeting a constitution and by-laws were adopted, and permanent officers elected, as follows: President, H. G. Wells, Kalamazoo; secretary, R. F. Johnstone, Detroit; treasurer, P. B. Loomis, Jackson. Directors: Hiram Walker, Detroit; D. K. Underwood, Adrian; John T. Blois, Jonesville; Linas Cone, Troy; G. W. Nelson, Grand Rapids, Wm. Bort, Niles.

The following January the society held a grand exhibition and

meeting for discussion, at Kalamazoo, which was commented upon most favorably by the agricultural press of the entire country.

This society like its predecessor, had a lingering existence for a few years, holding its last meeting just at the opening of the civil war.

Very soon after this several county societies were formed in various parts of the State, known as agricultural and horticultural societies, their only object being the making of an autumn exhibit. In 1869 the most flourishing horticultural society in the State was that of Spring Lake, Ottawa county. For some years this society had held regular meetings, and this year made a grand exhibit of its fruit products, at which there was a large attendance and the discussions were interesting and instructive. A careful census of the acreage into fruits, and the product therefrom, was taken under the auspices of this organization, by Mr. W. G. Sinclair; the publication of which gave this locality a great boom.

The first meeting called to organize a State society, which has grown into the present efficient State horticultural society, was convened in Grand Rapids, February 11th, 1870. The following temporary officers were chosen:

President, S. L. Fuller; vice-presidents, L. S. Scranton, S. S. Bailey; secretary, A. T. Linderman; treasurer, E. U. Knapp.

Articles of association were adopted the 26th of the same month, and through the influence of Henry S. Clubb, one of the charter members, who was a State Senator, a law was enacted for the incorporation of horticultural societies, and the Michigan State Pomological Society was the first association to take corporate form under it.

The Legislature of 1870-1 provided for the publication of the transactions of the society, and from that day to this the society has made steady and rapid growth.

For two years monthly meetings were held in a small room in Grand Rapids, the use of which was donated by S. L. Fuller. In June, 1872, the society showed its right to be called a State society, by holding a grand meeting at St. Joseph, and has since held quarterly meetings without a break.

At a meeting at Battle Creek, June 18th, 1880, the name of the society was changed to the Michigan State Horticultural

Society, for the purpose of according the name with the work of the organization, which covered the entire field of horticulture. At this time there was inaugurated a system of branch societies, by which, in any locality, there could be organized a horticultural or pomological society, connecting itself with the State society; and its members become, by virtue of this connection, members of the parent society, and entitled to all of its privileges. Under this arrangement thirty-two societies have been formed in the State.

The following comprises the list of these organizations and the names of the secretaries:

NAME OF SOCIETY.	SECRETARY.	P. O. ADDRESS.
Allegan Co. Pom'l Society.....	G. H. LaFleur.....	Millgrove.
Barry Co. Hort. Society.....	James C. Woodruff.....	Hastings.
Bay Co. Hort. Society.....	Will. H. Fennell.....	Bay City.
Berrien Co. Hort. Society.....	A. J. Knisely.....	Benton Harbor.
Benzie Co. Hort. Society.....	J. W. Van Deman.....	Benzonia.
Eaton Co. Hort. Society.....	S. R. Fuller.....	Eaton Rapids.
Genesee Co. Hort. Society.....	Ed. H. Rockwood.....	Flint.
Grand Haven Hort. Society.....	C. E. Russell.....	Grand Haven.
Grand River Valley Hort. Society.....	G. C. Bennett.....	Grand Rapids.
Holland Colony Hort. Society.....	I. Marsilge.....	Holland.
Hillsdale Co. Hort. Society.....	L. B. Agard.....	Litchfield.
Ingham Co. Hort. Society.....	C. B. Stebbins.....	Lansing.
Ionia Co. Hort. Society.....	J. H. Kidd.....	Ionia.
Jackson Co. Hort. Society.....	R. T. McNaughton.....	Jackson.
Lenawee Co. Hort. Society.....	D. G. Edmiston.....	Adrian.
Lenawee & Hillsdale Hort. Society.....	Mrs. Hattie C. Russell.....	Hudson.
Lawton Pom'l Society.....	C. D. Lawton.....	Lawton.
Lapeer Co. Hort. Society.....	H. W. Davis.....	Lapeer.
Mason Co. Hort. Society.....	L. W. Rose.....	Ludington.
Macomb Co. Hort. Society.....	Alex. Grant.....	Utica.
Manistee Co. Hort. Society.....	J. V. P. Mukantz.....	Manistee.
Muskegon Co. Hort. Society.....	H. H. Holt.....	Muskegon.
Oakland Co. Hort. Society.....	James S. Bradford.....	Pontiac.
Osceola Co. Hort. Society.....	W. L. Stoddard.....	Evart.
Oceana Co. Pom'l Society.....	A. E. Souther.....	Shelby.
Saugatuck & Ganges Pom'l Society.....	Rev. J. F. Taylor, Prest.....	Douglas.
Spring Lake Hort. Society.....	J. H. Farmer.....	Spring Lake.
South Haven & Casco Pom'l Society.....	A. G. Gulley.....	South Haven.
Washtenaw Co. Pom'l Society.....	J. Ganzhorn.....	Ann Arbor.
Wayland Hort. Society.....	C. R. Davison.....	Wayland.
Wayne Co. Hort. Society.....	D. F. Griswold.....	Northville.
Wexford Co. Hort. Society.....	E. F. Sawyer.....	Cadillac.

SOME OF THE WORKERS.

Even a brief resumé of Michigan's horticultural progress would be incomplete without naming at least a few persons who have been active in the promotion of horticulture here.

Among those who are gone who brought a wealth of experience, and who were always willing to impart it to others, were George Parmelee, of St. Joseph and later of Grand Traverse; Wm. Bort, of Niles; Edward Bradfield of Ada; G. W. Dickinson, Grand Rapids; John Gilbert, of Ovid; George W. Towles, Benton Harbor; S. O. Knapp, of Jackson; David Allen, of Plymouth; Abel Page, of Grand Rapids; S. B. Peck, of Muskegon; Jeremiah Brown, of Battle Creek, and J. Webster Childs, of Ypsilanti.

Among those who used their pens most effectively were R. F. Johnstone and J. P. Thompson. Mr. Johnstone, as editor of the *Michigan Farmer*, freely gave the columns of his paper for the improvement of our horticulture, and in the files of this valuable paper are found the most complete history of the development from year to year of our special horticultural capabilities. Mr. Thompson had for years, his leading purpose, the advertisement of Michigan as a great fruit-growing State; his enthusiasm was unbounded and his ability of the best.

Many gentlemen who have gone from us, although not horticulturists, by their influence, aided materially, during their lives, in promoting our great pomological interests. Among them may be named Judge H. G. Wells, of Kalamazoo; Hunter Savidge, of Spring Lake; Governor John J. Bagley, of Detroit; John Ball, Grand Rapids; Frederick Hall, Ionia; F. J. Littlejohn, of Allegan; R. E. Trowbridge, of Birmingham.

I would like to make a list of men now living who have done valiant service for horticulture by experimenting and imparting the results of their work, by maintaining organizations, by ever having their shoulders at the wheel. But my limits forbid.

However, two men I will name in this connection, who should be honored above all others because of their unselfish devotion to the interests of Michigan horticulture, extending through the half century, the close of which we now celebrate.

T. T. Lyon, the honored President of our State Horticultural Society, has given the best years of his life for the good of the pursuit which captivated him in his early life. In his life-long experience, in his constant vigilance to see that Michigan's promises and peculiar capabilities were brought to

the front, and in his devoted liberality which he has brought to bear upon the progress of the science of pomology, we are largely indebted for the advanced standing which our State has taken among her sister States, in matters of pomology.

To Mr. Benjamin Hathaway, of Cass County, we are indebted for a long line of careful experiments, the results of which he has freely given to his fellows. And not only this, but he has contributed not only his results but his experience in securing the results, which is invaluable to planters in our State.

Mr. Hathaway has been a pioneer in all the branches of horticulture, and did not neglect to set an example to others when he saw the unwarranted destruction of our timber, of how rapidly, under skillful management, the timber could be made again to cover the land, restoring in time the lost climatic conditions.

A GLIMPSE AT STATISTICS.

Unfortunately those who have in charge the gathering of statistics, have not seen fit, in our State, to go into the details of horticulture, so that it is impossible to give exact figures of the aggregate yield of any of the orchard or garden products. In truth, market garden produce, which has grown rapidly into prominence during the past fifteen years, is given no place on the blanks of our Supervisors who gather the crop statistics. In a few localities, individuals and societies have carefully gathered data, and from these I have made the following notes and estimates:

An apple tree in bearing in the State of Michigan, is equivalent to an investment of \$8.00 at 7 per cent. interest, and a peach tree in a reasonably favorable locality may be represented by at least \$20.00, bearing a similar rate of interest. It requires greater skill to grow an apple tree than a piece of wheat, and the marketing of fruit is a more precarious business than wheat; but the profits are better, and a plant once made is a permanency for a series of years.

The aggregate apple crop of our State for 1885 approximated 5,000,000 bushels. In western Michigan, where the peach crop was good, it was not uncommon to have a peach orchard pay a net profit of \$300 per acre. The small fruit area is getting to be enormous in our State, and one hundred bush-

els of strawberries per acre is considered but a small yield: while the same amount is often raised of raspberries and blackberries.

In a single year the County of Berrien has been known to ship 29,327 bushels of strawberries, 5,067 bushels of raspberries, 10,787 bushels of blackberries, 201,611 bushels of peaches, and 16,633 barrels of apples.

This was when peaches were most abundant, and before the yellows had ravaged the orchards; but with the decreased production of peaches, the small fruits have increased.

South Haven has shipped in a recent year \$155,012 worth of fruit from June to December. The apple product of Genesee county, over near the other side of the State, in 1882, aggregated \$105,000. We might multiply these figures by taking the statistics of other parts of the State. The market garden products aggregate an enormous sum, as they are grown about our large cities. And the flower trade is growing rapidly.

WHAT OTHERS HAVE SAID.

The horticulturists of our State have caught the spirit of the age, and have not hid their products under a bushel. Wherever opportunity has offered, we have placed in great exhibitions the products of our orchards, and to some purpose; while other States have come to Michigan for material at times to embellish their pomological exhibits, when advertising the capabilities of their own limits, we have had no need to go beyond our own borders to secure material that has commanded the praise of the nation.

Regarding the display from Michigan orchards at the national exhibition of the American Pomological Society in 1875, the committee on awards said: "Michigan made a grand exhibition under the name of the State Pomological Society. Her fruits were from ten different counties, and a large number of exhibitors, embracing very many handsome lots of apples, and the finest plums on exhibition, a large variety of grapes; the largest blackberries ever seen by the members of the committee, and figs grown in the open air at South Haven and ripened on the balmy shores of Lake Michigan. The entire display covered 900 plates and occupied much the largest space of any State."

At the centennial exhibition in Philadelphia, in 1876, the exhibit of long keeping apples, made in May by our State, so far eclipsed the displays from other States that many of their exhibits were unopened.

In 1880 the exhibit of fruits made by our State Horticultural Society at the biennial meeting of the American Pomological Society, in Boston, Mass., was pronounced by the honored president of the society, Col. Marshall P. Wilder, to be "the glory of the entire exhibit," and again in 1885, when this great society came into Michigan, we made a show of fruit that astonished the delegates from everywhere abroad, and the representatives from every part of the Union were impressed as never before, of the wonderful pomological capabilities of the Peninsular State. The medals held by the Michigan State Horticultural Society testify to the success of all these and other competitive exhibitions of horticultural products made by our State.

MICHIGAN FOR HOMES.

But it is in connection with the rural homes of Michigan that we see the most striking influence of horticulture in our State.

Michigan is emphatically a State in which to build permanent homes; homes that are independent, attractive, in which, through the aid of an advanced horticulture, there is engendered a spirit of quiet satisfaction that gives permanence and continuous prosperity to a population. These conditions are secured through our climatic conditions, and the character of the people who have led the van. Our pioneers, who laid the foundations of our present orchards, came largely from New York, where they had only been taught the value of the fruits of the orchards and gardens as home accompaniments.

THE LESSON OF THE YEARS.

The surveyor, as he runs out long lines that are to be the future boundaries of sections, townships, counties and commonwealths, is not only concerned about the direction he is to take in advance, but occasionally reverses his transit and corrects his line by carefully taken backsights. So we to-day call a halt for a moment, and with shaded eyes peer back through the years of progressive development of the material interests

of Michigan; not simply to bring into view the steps of progress as a matter of self gratification, nor to humble ourselves by a glance at our small beginnings—but for the more worthy purpose of correcting our lines, and by the elimination of errors, strengthen foundations for future progress and prosperity.

The lesson of the hour for our State, as far as horticulture is concerned, is that bonanza farming will add nothing to our prosperity. Small farms that are readily converted into delightful homes, by bringing into them the refinements of education, and about them the attractions of modern horticulture, will be the foundation of Michigan's future prosperity.

Any country that is especially adapted to horticultural pursuits has a permanent advertisement to home seekers, the details of which will appeal to the common sense of any who are seeking a permanent location for building a home. The advantages which mark a region as adapted to the prosecution of a broad horticulture, are just those which one seeks when he intends to settle for life. The products of horticulture are the most delightful home accompaniments, and in the development of some branch of horticulture, no matter what the principal occupation of life may be, one gets a wholesome satisfaction that brightens the seasons and softens the declining years.

But in our own State we are living far beneath our possibilities, until we recognize so fully our delightful conditions as to make the most of them in the preservation of the natural beauty and protection of a reasonable area of forest growth; in the embellishment of our school grounds, public parks, churchyards and cemeteries, and the wealth of native plants that are indigenous to our borders, in the growing of the fruits, flowers and vegetables about every homestead that will make labor more attractive, home more delightful and life a richer boon.

The native beauty of our peninsula, which led to the selection of the Latin motto that is written on our coat of arms, loses nothing in application, through the development of the resources of our State, in support of a large population, provided there is an adequate appreciation of the value of embellishing each individual home with the attributes that

may be found about us, and through the aid of a knowledge of advanced horticulture, it is made to reflect the native beauty of our Michigan landscape, together with the other refinements which accompany an advanced civilization tempered with a patriotic benevolence.

BRIEF MILITARY HISTORY OF MICHIGAN AS A TERRITORY AND AS A STATE.

COMPILED BY JNO. ROBERTSON, ADJUTANT-GENERAL.

"Land of the West! green forest land:
Thine early day for deeds is famed,
Which in historic page shall stand
Till bravery is no longer named."

The vast Northwest Territory, unbroken in native grandeur, unsurpassed in forest, river and lake, with a fertile soil, unequalled in rich minerals hidden in the unexplored depths of the rock. Once the roaming and battle ground of the nomadic tribes of the American savage, the pasture land of the elk and the cariboo, now covered with productive fields and inhabited by a people of intelligence with a high degree of civilization, living in comfortable dwellings and mansions, indicating thrift, prosperity and wealth, the result of industry, enterprise and energy. Thus the western wilderness has been transformed into rural homes and villages, populous cities and great States.

The martial career and consequent military history of a State largely depends on surroundings, circumstances and events, which bring into historic notice her military forces, by becoming engaged from time to time in active service, either in protecting her people from hostile incursions, suppressing sedition, insurrection or other internal commotions, aiding in the enforcement of law and maintaining peace, or defending the General Government against rebellion or foreign invasion, or in punishing its enemies for insult to its flag, or infringement on its national rights.

Peculiar surroundings, uncommon circumstances and stirring events, in the land of Michigan, gave her at a very primitive day experiences of a military character, which, to some extent, have been periodically continuous, consequently inculcating,

not only in the earlier inhabitants, but in those who have followed, much of a military character, both in habit and spirit, more or less encouraged by the almost continual example of regular troops in their midst, and their consequent personal association with them, thereby commencing at an early day an interesting military record and history which have been continuous up to the present time, equal if not surpassing that of any other State. Although her earlier military career was limited, both in service and results, yet reasonably creditable under the circumstances, her later service, consequent to the great war for the Union, was substantially extensive, most effective, and conspicuously gallant and brilliant.

All the territory now comprising the State of Michigan was at one time owned and inhabited exclusively by Indian tribes, and the land and forest lay sleeping in their original solitude. In due time, however, the energetic and persevering French pioneers toiled their way westward, and after traversing much land and water, reached what is now Michigan, and beholding with a jealous and envious love her boundless forests, beautiful rivers and unrivaled lakes, established their homes in the wilderness.

At the Falls of St. Mary's, in 1671, representatives of the Indian tribes from the St. Lawrence, the Mississippi, the Lakes, and even the Red River, met in convention, and veteran officers from the armies of France, intermingled here and there with a Jesuit missionary, a cross having been raised, and also a cedar post, on which the French lilies were inscribed, intended as a substitute for a flag, the first symbol of government established on Michigan territory. The representatives of the savage hordes were then informed that they were under the protection of the French King, and the lands were formally taken possession of by M. de Lussou, on behalf of his Government, where a rude post was afterwards established.

In August, 1679, old Fort Mackinac was built by Robert de la Salle, a Jesuit pioneer who had turned his attentions to the French colonies in America, and in November of that year built one at the mouth of the St. Joseph river on Lake Michigan, which he called Fort Miami, now known as St. Joseph. In 1680 the post was burned by deserters from Fort Crevecoeur of the Illinois, on their way to Mackinac.

Early in 1700 the French Jesuits placed a mission and the French Government built and garrisoned a fort on the St. Joseph river, about fifty miles from its mouth, afterwards known as Fort St. Joseph. In 1761, after the capitulation of Montreal by the French in 1760, a detachment of the 60th British Regiment relieved the French troops and raised the English flag. Two years after some of Pontiac's warriors attacked the garrison of fourteen, in command of an Ensign, plundering it, killing the Commander and eleven men, and sending the three men left as prisoners to Detroit. This fort a few years later was again occupied by British troops, who were not molested until in October, 1777, when one Thomas Brady, a resident of Cahokia, in Illinois, organized a party of sixteen volunteers and crossed the prairies to St. Joseph, surprised the fort at night, attacked and defeated the garrison of twenty British regulars, and captured a quantity of merchandise, but on their return were overtaken by a detachment of British soldiers and Indian allies at the Calumet river, not far from the site of Chicago, and were completely routed.

In 1778 three hundred French and Indians under Paulette Meilett, the founder of Peoria, Illinois, marched across the country, attacked Fort St. Joseph, defended by English troops with cannon, seized all the Indian goods stored there, and sent the garrison to Canada. When Meilett left, the English returned and were again in possession.

The Spanish Government, then holding the territory bordering on the west bank of the Mississippi from New Orleans to what is now St. Louis, and at the same time laying claim to the country as far east as the Ohio river, was preparing to strengthen her pretensions and include in her territory what was known as the Northwest. In January, 1780, the Spaniards sent forth an expedition from St. Louis, set on foot under the direction of Don Francisco Cravat, a Spanish Colonel of infantry. This force was in command of Spanish officers, and was made up of sixty-five militiamen, thirty of whom were Spanish, and the remainder supposed to be of French birth, but all sworn subjects of the Spanish Government, with a band of sixty Indian allies, believed to have been Pottowatomies. The object of the expedition being to strike a blow at England, then the foe of both France and Spain, by the capture of

the British fort St. Joseph, said to have been located one mile west of the present city of Niles, and at this time the nearest British fortification to St. Louis. The command marched across Illinois and through Michigan, flying the flag of Spain, and on reaching the fort the few English traders and soldiers defending it were totally unprepared for the sudden attack which made them prisoners, and through Don Eugenia Pournè in command, was surrendered Fort St. Joseph to the King of Spain, and the English flag gave place to the standard of His Most Catholic Majesty, while the force remained there. The fort was plundered, most of the provisions and goods were given to the Indians, the remainder, with the magazine and store-houses, were destroyed. The command remained but a few days for rest and refreshments, and then commenced their homeward journey to St. Louis, which was accomplished without incident, carrying with them in triumph the English flag, which was delivered to Don Francisco Cravat in testimony of the successful execution of his orders.

In July, 1701, the first permanent settlement on Michigan soil was made on what is now the site of Detroit, then an Indian village.

“ Here warrior to his standard flew,
Not knowing what his future doom;
And, calling on his Manitou,
Would plunge into the forest gloom.”

The several Indian tribes then inhabiting the country in the vicinity of this village seemed to have each a name for it in their own language, most of them, however, indicating that a “ Strait ” was the name intended.

It was chosen by Antoine de la Motte Cadillac, who had been granted by Louis XIV of France a tract of fifteen square acres of land in the wilderness, where he landed with one hundred men from Montreal and constructed a fort. Thus was acquired a very limited white population made up of fur traders, trappers, *voyageurs*, with some missionaries, who there erected a fort, while one was also built where Fort Gratiot now stands, one at Mackinac, one at St. Joseph Island, and one at Sault Ste. Marie.

These forts established at long distances apart, at points

along the lake frontier, are most of them now occupied as forts. Five times their flags have been changed, while they have been under three different governments. The French occupation commenced in 1671, and continued until 1760, when they were surrendered to the English and occupied until 1796, when they were evacuated and garrisoned by the Americans. In their day, flying respectively, first, the *fleur de lis*, then the proud flag of France, then the haughty crosses of Saint George and Saint Andrew, which was then the flag of England, "that has stood a thousand years, the battle and the breeze," and then that bright galaxy of stars, beautifully combined with the national colors, the red, white and blue, the flag of America, destined perpetually to float in brilliancy and truth o'er land and sea, the emblem of liberty.

The Northwest Territory, when it was claimed and occupied by France, was a vast ranging ground for the numerous Indian tribes, who roamed over it in all the listless indolence of their savage independence, so characteristic of the Indian and Indian life.

The Indians and half-breeds were not favorable to what they considered the encroachments of the whites, hence their location at various points on their territory was not acceptable, often leading to threatenings and hostile opposition with occasional attacks. On the 13th of May, 1712, the Foxes, considered the Ishmaelites of the wilderness, in large force in league with the Iroquois made an attack on Detroit, bent on its entire destruction. It was then garrisoned by M. Du Buisson with twenty French soldiers, aided by Indian allies, including the *coureurs de bois*, or rangers of the woods, lawless but practiced and skilled marksmen. The Indians after a long and severe fight, struggling to the last, were defeated with great loss and driven from the field in utter confusion.

This was recognized at the time not only as an important battle but as a very severe one, as the attacking Indians exhibited a degree of courage and endurance unequalled by any Indian tribe since that time, while it was also important, as a defeat of the French would undoubtedly have involved the destruction of the place and most likely the massacre of at least a portion of the white population. The attack was made during the absence of the Ottawas, the Pottawatamies and Hurons,

friendly Indians, rendering the garrison comparatively weak ; but it did not come unawares, as the commander, on information, had summoned portions of the friendly Indians within reach to his reinforcement. Soon after the attack commenced they began to arrive and were admitted inside the fort, when preparations were made for an active and effective defence. On discovering the force of friendly Indians engaged, the Foxes retreated to the adjoining forest, where they entrenched in camp. The French, backed by their allies, in order to force their enemies from their position, erected a block-house within range of the hostile camp, when a heavy fire was opened on them and a close siege commenced and continued until, driven to desperation from thirst and hunger, all their supplies being cut off, they rushed from their stronghold, attacked the French and friendly Indians and took position in a house close by, which they fortified, where they were again attacked with French cannon and driven back into their former intrenchment. Ascertaining that their former league was proving unsuccessful the Foxes asked the French commander for peace, which he declined to accord them. Feeling much insulted at the denial, they attacked the fort and houses with showers of blazing arrows, kindling the dry roofs into flames, but most of them were saved by the use of wet skins. The desperate fighting of the Foxes so discouraged the French commander, that had it not been for re-assurances of the Indians of more aid he would have abandoned Detroit and retired to Mackinac ; being satisfied with the promise, however, he determined on further fight, and advancing from the fort, delivered on their intrenchments a deadly fire, when they were soon filled with dead and dying. After again suing for peace, but before any capitulation was effected, the Foxes during a storm at midnight retreated towards Lake St. Clair, having been engaged in the siege with more or less fighting for nineteen days. The discovery of their flight led to their immediate pursuit, and they were soon overtaken and attacked in intrenched camps, the commencement being rather in their favor. This fight lasted for three days ending with applying a field battery which soon reduced the works and scattered the Indians.

After the attack on Detroit, the territory remained in comparative peace, although the two great powers, France and

England, struggling through intrigue with the Indians, had become engaged in a desperate contest for the supremacy, the first to hold, and the latter to obtain, dominion. This condition of affairs continued until 1757, when the British Government projected a campaign of a very formidable character, and soon after with an army of 12,000 men, commanded by General Amherst, invaded the French colonies in America, and after the fall of Quebec, under the capitulation of 1760, took military possession of all the forts held by the French both in Canada and on what was known as the American side.

While a detachment of English troops was advancing to occupy the fort at Detroit under that capitulation, a very singular symbol was made use of by the French officer in charge. Being indisposed to give up possession, he determined on resistance, and with this in view, he collected a body of Indians to assist him. Being aware that the Indians were liable to be strongly influenced by symbols, he erected a pole, placing thereon the image of a man's head, and on this he put a crow, telling the Indians that the head represented the English, and the crow himself, meaning that the French would scratch out the brains of the English. They did not believe him, however, but were of the opinion that the reverse would be the case. When the French officer gave up the fort the Indians loudly shouted in derision, and rejoiced that their opinion had been verified.

The English continued in peaceable possession of these forts until April, 1763, when a large combination of Indian tribes, known as the conspiracy of Pontiac, was organized by the celebrated chief unfavorable to the British possession. Pontiac having been led by the French to believe that the intention of the English was to drive him and his people from their lands, considered them as dangerous intruders, and for the purpose of forming a conspiracy to wage war against them, assembled a grand council of Indians at the River Aux Ecorse, where he addressed them in person, telling them, among other matters, that the British were their natural and inveterate enemies, and that the Great Spirit had directed that they must be removed from their possessions. At the same time he exhibited a war belt which he said the French king had sent

him from beyond the sea, with orders to drive the British from the land and make way for the return of the French; consequently he commenced distributing war belts among the principal tribes on the borders of the lakes and formed a line of operations of more than a thousand miles along their waters, with the intention of concentrating forces at various points for the purpose of attacking the British forts. Soon the Indians abandoned their hunting grounds and camps for the war path and repaired to the frontier. Then followed general and simultaneous attacks on most of the forts. Detroit being among the number, and a most important point, was assailed and besieged on May 10th by a large force of Indians under Pontiac in person, while it was defended by Major Gladwin, the British commander, with one hundred and twenty-two men and eight officers. The fort was of a square formation, surrounded by three rows of pickets. Most of the houses inside were protected by the guns mounted on the works. All the inhabitants were provided with arms and ammunition and a place was reserved within the inclosure for the deposit of arms, named *Le Chemin du Ronde*, and over the gates of the fort at each of its corners there were small dwellings. The Beaver, an armed schooner moored in the river, defended the town in front. Pontiac intended to take the fort by surprise, and to aid him in his purpose proposed a council to the commandant "that they might brighten the chain of peace" and to avoid any appearance of hostile intentions had ordered a portion of his warriors to saw off their rifles so short that they could conceal them under their blankets, and under a feigned pretence to gain admission into the fort and massacre the garrison. The plot of Pontiac was exposed by an Indian woman named Catherine, who informed Major Gladwin of his designs. The Major at once took the necessary measures to meet the contemplated surprise by doubling the guard, and placing sentinels on the works. The fires of the Indians seen during the night in the vicinity, convinced the garrison that something was in contemplation, and the woman's story was believed to be true. Next morning, according to appointment, Pontiac repaired to the fort, accompanied by his warriors. On advancing, he discovered on the works a greater number of soldiers than usual and all the officers fully armed. Having entered

the Council House, he opened the discussion with a friendly speech, but as he progressed he became very vehement, and at the time when the woman said his designs were to be uncovered by the exposure of the war belt and the uprising of his warriors, the Governor and his officers drew their swords, and the clatter of an armed force was heard outside, when Pontiac discovered that he was the party surprised, although he continued perfectly calm and unmoved. The Commandant still more surprised him by at once charging him with treason, and in order to convince him of his knowledge of his plot, took from under the blanket of one of his Indians the shortened rifle. He also ordered him and his warriors instantly to leave the fort, as on discovery of his treason the soldiers would show them no mercy, but at the same time assured them of protection while leaving. The warriors on leaving the fort fully evinced their hostile intentions by turning and firing on the garrison, and then collecting in larger numbers around the fort, continued to fire from the shelter of the nearest houses; but they were soon shelled and burned. Still a constant fire was continued on the fort from a low ridge which overlooked the pickets. An attempt was made to burn buildings with blazing arrows, but did not succeed, a Jesuit priest forbidding it, as it would be displeasing to the Great Spirit. Then resort was had to making a breach in the pickets, in which Major Gladwin aided by cutting them on the inside, thereby weakening them so that it was easily effected, when the fort was at once filled with Indians, but no sooner was this done than the discharge of a brass cannon which had been trained on them, made terrible havoc. After this the fort was merely blockaded and its supplies cut off, but which brought great suffering on the garrison. The loss of the Indians has not been given; but among the British, Sir Robert Devers and Captain Robertson were killed, and their bodies boiled and eaten; while from a portion of the skin of the arm of the latter, a tobacco pouch was made.

Major Campbell, who had then been assigned to the command of the fort, was inveigled into a pretended peaceful interview with Pontiac, and under a promise of being returned in safety. When in his power, however, he informed him that his life should only be spared on condition that the fort be sur-

rendered. The demand was not complied with, and Campbell was held as a hostage and afterwards suffered death by a blow from a tomahawk in the hands of an Ottawa, who had come from Mackinac for the purpose, and who sought revenge for the death of his uncle, a chief of that tribe, who had lost his life in the siege of Mackinac.

The savages, having lost heavily, and finding all their attempts to destroy the fort unavailing, endeavored to get the French settlers as allies, but failed. They then fell back on Bloody Bridge, now known as Bloody Run, where they were attacked by Captain Dalzell with about 250 men, part of a reinforcement of 300, which had just arrived in gunboats from Niagara, when one of the most severe and bloody fights took place known in Indian warfare, in which the British troops were repulsed, retreating under the protection of their gunboats to the fort, with a loss of 19 killed, including their commander, and 42 wounded.

While these scenes were passing at Detroit old Fort Mackinac, with a population of about thirty families and garrisoned by ninety-three English officers and soldiers, in command of Major Etherington, was attacked in June, 1763, by Indians, then numerous in that vicinity, who were determined on getting possession of the fort and massacring both soldiers and citizens. They therefore planned a scheme to gain entrance to the fort by throwing a ball over the pickets while engaged at a game of ball in view of the commander and soldiers, who were mostly outside, and then rushing in with their rifles, that had been purposely shortened so that they might be concealed under their blankets. This they successfully accomplished, and instantly raised their war-cry and commenced the massacre of the unarmed, scalping, cutting to pieces, and even drinking their blood, and not until most of their victims within reach had been killed or scalped did they cease their horrid work. The fort was burned to the ground, seventy of the soldiers were killed, and to complete their sanguinary deed many of them were boiled and eaten by the savages, the Indians after the slaughter retiring to the Island of Mackinac, while those spared were all released.

The Indians in the confederacy, perceiving that they could no longer contend against so powerful a foe, laid down their

arms, and thus the war in the territory for the time being was brought to a close. Of Pontiac, after his discomfiture but little is certainly known. Disappointed and mortified at the failure of his plans, he retired to Illinois.

“ I will go to my tent and lie down in despair;
I will paint me with black and will sever my hair;
I will sit on the shore, where the hurricane blows,
And reveal to the God of the tempest my woes.”

The character of Pontiac was bold and strongly marked, excelled by none of his race in courage, strength and energy. He possessed traits which pointed him out for a leader; undismayed by difficulties, and far-seeing and comprehensive in his plans, he fought from a sense of justice and in defence of the rich domain which had come to him from his ancestors. He was assassinated about the year 1767, by an Indian of the Peoria tribe.

The Indian insurrection having been entirely quelled, the English adopted a system of conciliatory measures to secure the good will of the disaffected tribes, and continued to pursue the same general policy of the French regarding government and trade, while the forts still continued to be garrisoned by troops.

During the struggle of the American revolution, and up to the end of the war, the Indians within the borders of Michigan were, under the influence of the English government, employed by British commanders to harass the American settlements without power of defence. In the vicinity of Detroit and Mackinac they were furnished with arms and ammunition, and were despatched to pillage, burn, massacre and scalp, and on their return received the stipulated price for scalps. Nothing of military interest had occurred for several years in the territory after the Indian insurrection, and not until 1796, when American Independence was declared and the forts were all surrendered to the United States. Detroit and Mackinac being the principal posts, the former was taken possession of on July 11th of that year, by Captain Porter, with troops from the army of General Hamtramck, then in the Miami Valley, when the American flag was raised for the first time on its ramparts and the fort passed quietly into the possession of the United States.

The white population from this on began to increase, but became very mixed as to nationalities of the inhabitants, while the accessions were still largely made up of the trader, trapper and *voyageur*, but having more of the American element, possessing more energy, greater force of moral character and personal courage.

“ I hear the far-off *voyageur*'s horn,
I see the Yankee's trail,
His foot on every mountain-pass,
On every stream his sail.”

The whites, distrustful of the friendly Indians on their own border, and of the strength of the small detachments of troops so far apart, and without means of rapid transportation to reach them speedily in the event of a sudden uprising, and especially as the whole Canadian frontier was swarming with Indians of a very doubtful friendship, being more or less encouraged in mischief by the British, were compelled to organize and arm themselves as best they could for mutual defence, establishing early on Michigan soil a semi-military service, which necessarily became continuous, inculcating preparation and a habit of ceaseless watchfulness, and guarding, in expectation of unforeseen attacks at any moment, day or night, and thus, from necessity of self-preservation, they became in fact efficient citizen-soldiers in all but name and appearance. These brave and hardy traders, trappers and *voyageurs*, French, English and American, many of them of the highest intelligence, were men inured to hardship, looking danger, fight and massacre in the face every day of their lives, became prepared at all times to meet either.

MICHIGAN !

“ Thine early day ! it nursed a band
Of men who ne'er their lineage shamed ;
The iron-nerved, the bravely good,
Who neither spared nor lavished blood.”

On both the American and Canadian frontiers were found a class of men of very questionable character, who might be designated as middle-men, who acted between the whites and Indians, and sometimes as interpreters ; they were made up of whites and half-breeds with nothing to lose, but with constant

expectation of gain ; a specimen of the villainous compound of the frontier braggart, called by the Indians Shaw-go-dah, or boaster, and the confirmed idler, bold in a bar-room, but in a fight dodgers, yet ready at all times to agitate and incite hostilities between the traders and Indians, with much damaging effect on the peace and prosperity of the settlements.

The militia organizations existing under the laws of the Northwest and Indian Territories were very limited. Although in May, 1803, there appears to have been a parade in Detroit of the First Regiment of Wayne County, which then included more space than the whole State of Michigan now does ; these parades were ordered once a year under law, and were in the most primitive style, the troops having to provide arms and equipments at their own expense, and only cavalry and light infantry were required to appear in uniform.

Such appears to have been the condition of the protective or defensive force, aside from the small number of troops scattered along the frontier up to June, 1805, when Michigan became a territory with the motto, "The shoot at length becomes a tree" (that of the Marquis of Waterford), covering what are now the State of Michigan and part of Ohio, Indiana and Wisconsin, with General William Hull Governor and Commander-in-Chief of the militia, who was appointed March 1st, 1805. Hull being a military man, a new impetus seems to have been given to military matters by the passage of an act of August 30th, of that year, authorizing the Commander-in-Chief to organize the militia in divisions, brigades, regiments and battalions, to appoint officers therefor, and to set apart certain days in the year for training, to designate the uniform ; providing, also, that all male residents over fourteen and under fifty be enrolled for military duty. At the time of the passage of the act referred to there appears, according to official reports made July 9th, 1805, to have been in service, fully organized and equipped, two regiments of infantry and what was known as the Legionary Corps, made up of cavalry, artillery and riflemen.

The First Regiment appears to have been raised in that part of the territory adjacent to Detroit, with A. B. Woodward as Colonel. The second in what was then designated as the Erie district, embracing all the territory south of the

River Huron, in Monroe county, commanded by Colonel John Anderson, while the Legionary Corps seems to have been made up from the residents in and around Detroit, with Lieutenant Colonel Elijah Brush commanding.

In addition to this force there had been organized on the Clinton (then called Huron) and St. Clair rivers a battalion of four companies, in command of Lieutenant Colonel Christian Clemens.

This seems to have comprised all the organizations of a military character then in existence, chiefly officered by Frenchmen, and they seem to have continued in service up to the commencement of the war of 1812, and were present at the surrender of Detroit, with the exception of the battalion of Colonel Clemens and the Second Regiment, which had been retained on the lower Raisin for the protection of the inhabitants against large numbers of Indians, arriving from the West.

In 1806, the Indian Chief Tecumseh, with his brother, the Prophet, incited by the British Government, commenced the formation of a confederacy of tribes similar to that of Pontiac, to operate against the American settlements in the Indian country, which was finally accomplished. From that on the savages became restless and very troublesome to the villages of the whites in Michigan. In the meantime, timely preparation was being made by the Indians for hostile operations. Arms were being procured from various sources, and near the banks of the Kalamazoo a smith's forge had been set up, where hatchets and knives were made for the approaching contest; and at no great distance from it, in a retired spot, the Indian women, surrounded by a dense forest, with their children, had collected for the purpose of raising corn to furnish a supply of food for the warriors.

It appears that the designs of Tecumseh were fully realized, for in the war of 1812 with Great Britain he was found with his Indian confederates a strong and faithful ally of the British.

War with England had for some time been anticipated. Meanwhile the Governor of Ohio, under instructions of the general government, had, with great alacrity, gathered together, organized, armed and disciplined a portion of the

militia of that State, consisting of three regiments of infantry, raised in the Scioto Valley, Cincinnati and the Muskingum Valley, and commanded respectively by Colonels Duncan McArthur, James Findlay and Lewis Cass, numbering in all about 1200 infantry with some cavalry.

On May 25th, 1812, the Governor placed those regiments under the command of General Hull, who on April 8th had been appointed a Brigadier General in the U. S. army, and a movement of this force towards the lakes commenced via the Miami Valley. On the 18th of June following the expected declaration of war was made by Congress, and on the 24th Hull, while on the march, received a dispatch from the war department directing him to hasten with his troops to Detroit and there await further orders, and on July 2d arrived there and assumed command with considerable staff and great pomp. The 4th U. S. infantry, Colonel James Miller commanding, having joined Hull on the march at Urbana, also formed a part of his command. On arriving at Detroit Hull's army became impatient for action, clamoring to be led into Canada, to drive off the "fort builders," as they called them, then at work erecting forts near Windsor and Sandwich, and attack Malden. On July 9th Hull received orders giving him full authority to commence offensive operations, and on the evening of the 11th, with about 1,600 men, including a battery of six-pounders in command of Captain Samuel Dyson, U. S. army, moved in boats across the river to Sandwich, the enemy abandoning their position at that point and falling back on Malden.

In the meantime reconnaissances were made by Colonels McArthur and Cass into Canada without much opposition, the former pushing up the Thames as far as the Moravian towns above Chatham, and finding no enemy entered upon a foraging expedition, returning to Detroit with considerable supplies, while Captain Joseph Watson, of the Michigan troops, with a small cavalry force, raided as far as Westminster, Colonel Cass moving down on the Canada side towards the Canard river, with a detachment of 50 regulars and 250 volunteers in command of Colonel Miller. On coming near the bridge over the stream, discovering that it was defended with cannon by a force of British troops, he attacked and drove them from their position, falling back on their works at Malden, when

darkness set in, rendering pursuit at that time impracticable. A refusal of Hull to follow up this advantage chagrined Cass so much that he became enraged, and did not fail to unfavorably criticise his commander in the most severe terms, and tradition says that in his anger Cass broke his sword over an old stump in the road.

News of the war reached the British post at St. Joseph's Island, in the St. Mary's river, in July, which was garrisoned by a company of regulars, numbering 46 officers and men, in command of Capt. Charles Roberts. On the 16th of that month this force embarked for Mackinac on board the armed brig *Caledonia*, with 250 agents and employes of the North West Fur Company, and traders, together with 500 Indians, all under command of responsible traders. They were joined on the passage by from 80 to 100, and on their arrival at Mackinac about 70 allies were added to the force.

The garrison of Mackinac consisted of 57 officers and men, commanded by Lieut. Porter Hanks, of the regular army. The British landed in the night on the beach at what has been known ever since as the "British Landing," which is on the side of the island reaching farthest from the fort. The British at once took possession of Fort Holmes, a position which completely commanded the whole island and approaches, rendering the fort in which were the American troops utterly indefensible, and resistance useless.

Hanks had been completely surprised, the appearance of the British force being the first notice he had received that war was in progress. Seeing at once that his position was untenable, and ascertaining the overwhelming force against him, he concluded to surrender, and in accordance with terms of capitulation his command marched out of the fort with the usual honors of war, and were paroled.

The commander started for Detroit, reaching there on the 29th, when Hull, not having heard of the affair, became nervously alarmed and immediately called for reinforcements.

Some time after the movement of the Ohio troops on Detroit two companies of volunteers were organized in that State, one at Chillicothe under Captain Henry Brush, and the other at Sandusky by Captain Thomas Rowland, the two forming a battalion. This command under Brush, with supplies from

Ohio for Hull's army, arrived at the Raisin on August 9th, where he ascertained that a British force was posted at Brownstown, cutting off all communication with Detroit, and having learned that the force was largely superior in point of numbers, concluded to await further developments.

Hull having received notice that Brush was on his way, on August 4th had detached Major Van Horne with about 150 of Findlay's regiment to meet him and act as an escort and guard. Meantime information of the movement had reached Proctor, the British commander at Malden, who sent across the river a force of soldiers, and together with about 300 Indians, intercepting him near Monguagon. Van Horne made a gallant attack; but repulsed and defeated he returned to Detroit.

On August 8th Colonel Miller with a detachment of 600 officers and men, 280 being regulars and the rest Ohio troops, made another effort to relieve Brush, but encountered opposition by a party of Indians who fired on his rear guard near Monguagon; he returned their fire, driving them on the main force, estimated at about equal to his own command, made up of British regulars and Brownstown Indians, under the celebrated Chief Walk-in-the-Water. Miller then attacked them, and after a warm and severe fight defeated them, but with a loss of seventeen killed and wounded, while the enemy lost thirty whites and one hundred and four Indians killed and wounded. The British disappearing during the night, Miller next day got his wounded into boats, and thinking that the communication with Brush had opened, and failing to get supplies as promised by Hull, marched for Detroit on August 11th, reaching there next day.

This is recognized as the principal engagement connected with the surrender of Detroit, and is designated in the records of the War Department as the battle of Brownstown.

The British commander, General Brock, having been concentrating his forces at Malden and vicinity for some time, and constructing batteries opposite Detroit, on the morning of August 15th opened fire on a battery commanded by Captain Dillaba, U. S. A., which had been made near the centre of the town, but near what was then the river bank. At the time the batteries opened a flag of truce was received by Hull, demanding a surrender, which he answered about 3 o'clock, stating that

he was ready to meet Brock's force and all the consequences. The British guns again opened and were at once answered with vigor by the Dillaba battery and others, continuing until about 10 o'clock at night.

On the morning of the 16th a brisk fire was again opened by the batteries of the fort with considerable effect, which was promptly replied to by the American batteries. The enemy in the meantime, about 750 strong, commenced crossing the river in vessels with an astonishing degree of boldness, landing at Springwells without opposition, commenced the advance on Detroit without the least obstruction or resistance, while the American batteries were refused permission to fire on the advancing enemy.

The fort at the time of their landing was garrisoned by the Fourth regular infantry and some detached companies of the regular army, one of them of the First Regiment, in command of Captain Whistler. The First Regiment Michigan troops then in command of Colonel Elijah Brush, and the Legionary Corps, in command of Major James Witherell, together with the three Ohio regiments were on the commons in rear of the town, but not far distant, ready and eager to attack the advancing columns. The Second Michigan Regiment, at the request of Colonel Anderson, had been retained on the lower Raisin for protection of the inhabitants against large numbers of Indians arriving from the west, and was not present.

Colonels McArthur and Cass were also absent; they had been sent with 350 officers and men of the Ohio troops on another expedition, to open communication with Brush, who was still at Godfrey's trading post on the Upper Raisin, but before they had reached him were ordered by Hull back to Detroit, arriving near there after the surrender. Brush was finally reached by a British officer, who demanded his surrender, to which he declined to accede, and marched his troops back to Ohio without parole.

On the enemy's reaching a certain point in his advance on Detroit, the volunteers on the commons, instead of being allowed to attack, which they so urgently demanded, were all ordered inside the fort. When Findlay with his regiment reached the gate he halted outside, and with Major Snelling found Hull inside, much dissatisfied and indignant, and at the

same time much excited. Findlay abruptly said to his commanding officer: "What in hell am I ordered here for?" Hull replied in a low trembling voice that in view of the number killed in the fort, a surrender would be best, that he could procure better terms from General Brock at that time than if he waited a storm. Colonel Findlay replied: "Terms! damnation! We can beat them on the plain. I did not come here to capitulate; I came to fight." But he had to enter with his regiment, notwithstanding his forcible protest.

The fort was totally insufficient to hold so many, and thus being huddled together almost in a solid mass, a shot or shell entering from any direction could not fail of doing fearful execution. When the enemy had arrived at a point on the route within a mile of the town, their approach, coupled with the result of the fire from the batteries, terrified and bewildered Hull so that without any consultation with his officers he raised the white flag and surrendered, which he seemed to accomplish with an astonishing degree of unconcern and effrontery.

About noon of the 16th of August, General Brock with his forces triumphantly entered the fort, and the Americans marched out with solemnity and silence; the stars and stripes were hauled down and replaced by the British colors. A garrison of 250 officers and soldiers was established in command of General Proctor, and the fort and town were again under the British government.

By the capitulation he surrendered about two thousand men, with a large amount of supplies, provisions, 2,500 stand of small arms and a quantity of ammunition and including thirty-five iron and brass cannon; most of the supplies being at once transferred to Malden. The regular troops were held as prisoners of war and sent to Montreal, Quebec, and some even to Halifax, while those of Michigan were paroled at Detroit, and those of Ohio were also paroled there and sent in vessels to Cleveland.

Thus was accomplished the surrender of Detroit, a fortified place, to an inferior force of unequal equipment, with a disadvantageous position, in an enemy's country, with a broad, deep and rapid river in the rear, and with a limited means of retreat in the event of defeat. An audacious and bold undertaking, its success mysterious and unaccounted for, except in

positive imbecility or treasonable connivance in the American commander. Thus presenting the humiliating spectacle of the unconditional surrender, without a shot, of an American fort well planned and substantially constructed, amply equipped and supplied in every respect, fully manned with troops well posted, eager and persistent to defend it, artillery in position commanding all the approaches, with officers and men begging the denied privilege of opening fire on the advancing enemy. The American people to this day abhor the thought of the disgraceful surrender, and while they justifiably exonerate the rank and file, they denounce the pronounced cowardice, if not treason, of him who alone was responsible, and shudder with horror at the very thought of its being consummated by an American general.

On the day of surrender, and before his departure for Canada, Brock issued a proclamation declaring that the territory of Michigan had been ceded to the arms of His Britannic Majesty, without any other condition than the protection of private property.

Proctor succeeded Brock in command, who, on August 21, by proclamation, organized a civil government.

Hull was taken to Montreal, where he was offered, and accepted, his parole on September 16th, and allowed to proceed to his home. Charges were afterwards officially preferred against him of treason, cowardice and conduct unbecoming an officer, and neglect of duty. He was tried on these charges at Albany, N. Y., in January, 1813, and acquitted of treason, but found guilty on the other charges and specifications, and was sentenced to be shot, but on account of his services in the Revolutionary War, the Court earnestly recommended him to the mercy of President Madison, who approved of the sentence, but extended the pardon.

The American forces, with the exception of their commander, were faithful in their service to their country on every occasion where the opportunity was afforded them, while many of their officers, both regular and volunteer, distinguished themselves by bravery and gallant deeds, being specially mentioned in reports.

The Michigan troops were not afforded the desired opportunity to become actively engaged in that most feeble defence,

nor were they in the least responsible for the cowardly and unaccountable surrender of Hull, and in no wise were any of the other troops serving there, as all openly protested against it as a measure neither honorable nor necessary.

On the 18th of January, 1813, the exchange of Hull, McArthur, Cass, Findlay, Miller and the remainder of the paroled troops was officially announced, relieving them from disability to serve in the war.

Hull's surrender had the immediate effect of creating a general uprising all over the West ; a campaign was planned for the capture of Malden and the recovery of Michigan territory from British rule, and relieve the people from the terror of the merciless savages. Kentucky and Ohio were especially active, and General W. H. Harrison was, by common consent, put at the head of the forces, receiving a special commission from Kentucky, and also one from the United States Government. The troops raised were volunteers not called out originally by the United States, but brought into the field under the enthusiasm of the occasion.

General Winchester, an old officer of the revolution, in command of a division of these troops undertaking without orders to advance to the River Raisin, and on reaching there, met with a disastrous defeat. On January 18th, 1813, about 600 or 700 officers and men of his force, in command of Colonel Lewis, reached a point on the Raisin near what is now the city of Monroe, where he was attacked by a force of British and Indians. He at once made a disposition of his troops, crossed the river on the ice to what is now known as Frenchtown, and attacked, when the battle became very hot and destructive, driving them into the heavy timber, when darkness put an end to the conflict, having lost twelve killed and fifty wounded, while the British loss was not ascertained, their killed and wounded being carried off by the Indians.

On the 21st, Winchester, having arrived with the rest of his command, was apprised that he would be attacked that night or next morning, and urged to prepare for a severe battle ; but he disregarded the warning, and on the next morning at daybreak his camp was opened on with a heavy artillery fire of shot and canister, and assaulted at the same time by a force of British regulars and about 3,000 Indians, when, after a

severe contest, his force was compelled to recross the river, fighting bravely and desperately, with heavy loss. The enemy giving no quarter, the greater portion of his wounded were either killed or scalped, while Winchester and Lewis surrendered to Roundhead, an Indian, who delivered them up to Proctor, and on arriving at his headquarters and understanding the condition of his troops, Winchester surrendered his entire force with the understanding that the wounded and private property should be cared for and protected.

Notwithstanding this promise, the insolence and barbarity of the Indians commenced; an appeal to Proctor for protection failing to bring relief, some of the troops, still having their arms, opened fire on the Indians, which for the time being ended the mischievous work. Contrary to the assurance of Proctor, his promises were all disregarded; pillage was permitted without restraint or punishment. Those able to travel were put on the march, in the extreme cold and deep snow, for Malden, while the wounded, unable to travel, were left at the mercy of the savages, on the frozen ground. Soon after a large body of Indians, led by their chiefs, assembled on the ground in war paint, bent on revenge, and in council determined that the wounded should be put to death. This was fully carried into effect, and most of them were either scalped or killed, while two houses used as prisons for the captured were fired and consumed, with most of their inmates unable to escape. Many of them in trying to get through the windows were thrust back, while some who were not inside were killed and thrown into the flames.

The British victory was dearly bought. Proctor had 182 killed and wounded in his white force, or more than one-third; the loss of the Indians was not known; and of the American troops not more than 30 or 40 escaped; 537 prisoners were accounted for as first estimated, and the number was increased by 40 or 50 afterwards ransomed from the Indians.

The bloody battle of the Raisin, fought on Michigan soil, but not by Michigan troops, has well been designated in history as one of the inhuman massacres of the ages. The shot-gun, the tomahawk and scalping knife were the instruments of death in the hands of the victorious savages bent on unrestrained plunder and butchery, while the bodies of many

of the dead, being left unprotected and exposed, were devoured by dogs, swine and other voracious animals, the brutal tyrant who controlled affairs not even interfering in the least to secure their naked and mangled bodies a deposit in the frozen ground.

“ How dread was the conflict, how bloody the fray,
Told the banks of the Raisin at the dawn of the day,
While the gush from the wounds of the dying and dead
Had thawed for the warrior a snow-sheeted bed.”

“ But where is the pride that a soldier can feel,
To temper with mercy the wrath of the steel,
While Proctor, victorious, denies to the brave,
Who had fallen in battle, the gift of the grave.”

The expedition of Proctor into Ohio early in 1813, his attempted attack and failure May 1st on Fort Meigs, at the Maumee Rapids, then held by General Harrison, and his defeat on July 27th, following in his assault on Fort Stephenson, on the Sandusky river, in command of Major George Croghan, coupled with the advance of Harrison's army and Commodore Perry's great victory on Lake Erie on the 10th of September, rendered the retreat of Proctor on Malden advisable, which he accomplished in all haste. These events and the advance of Perry's fleet towards the mouth of the Detroit river compelled the abandonment of Malden on the 18th of that month by the British forces. On the 27th of September Harrison crossed from the Middle Sister Island to the Canada shore about four miles below Malden, and on marching into that place and finding it evacuated he at once prepared for pursuit, but did not expect to overtake Proctor until he should reach the Thames, where he told Tecumseh he meant to make a stand.

Proctor was at Sandwich when Harrison landed, and he at once moved eastward with the Detroit garrison and all his auxiliaries. On the 29th the American army reached Sandwich, and General Duncan McArthur crossed over and took possession of the fort, which he had left before under such different circumstances. The overjoyed inhabitants were released from what had become a reign of terror. The fort had been fired, but the flames were extinguished, and General McArthur drove off a horde of hostile Indians who were prowling round the neighborhood. The fleet arrived the same day. On the 29th General Harrison issued his proclamation

restoring the civil authority as it had been before the surrender, and entrusting its administration to the old incumbents when present, and to their next predecessors, if absent. Colonel Johnson's riflemen came up on the 30th and crossed into Canada on the day after.

The American flag is said to have been raised by the inhabitants before McArthur's entrance. But it never floated again from the old flagstaff. That was left bare and uncared for as a memorial and warning, until a few years afterwards, in June, 1820, it was blown over by a severe wind and ceased to be visible from the walls. What ignominious uses its ruins may have served is not recorded. It was not, however, in demand for relics. McArthur's command was left to hold Detroit. Cass' brigade was left at Sandwich, and Harrison, with Cass and Perry as volunteer aids, and a force of about 3,500, on the 2nd of October pushed on by land after Proctor, the smaller vessels of the fleet sailing up the Thames. Proctor was at last overtaken at the Moravian towns, and compelled to give battle on the 5th. The mounted riflemen dashed through the British line and turned it, and in less than ten minutes the whole force was captured, except General Proctor and seventeen officers and two hundred and thirty-nine men. The official reports of his own government show that he was regarded as having been guilty of grossly disgraceful conduct. His brave ally, Tecumseh, met a soldier's death by the hands of a brave enemy, Colonel Johnson.

The American fleet was now employed in removing the ammunition and stores from the captured British posts, and on the 18th of October General Harrison and Commodore Perry issued a joint proclamation at Detroit for the better government of the Territory of Michigan, and guaranteeing to the inhabitants their rights of property, and the enjoyment of their ancient usages and laws.

The Island of Mackinac was now the only part of the territory remaining in the possession of the enemy. This being a post of great importance, from its commanding the upper lakes and being the centre of the fur trade, a fleet under Commodore Sinclair, with a body of land forces under Colonel Croghan, the gallant defender of Sandusky, was dispatched in July, 1814, for the purpose of capturing it. After reconnoiter-

ing the coast near the Island, the Commodore proceeded to the neighboring British island of St. Joseph, where he destroyed a few trading posts and then returned.

Meanwhile the British commandant was actively employed in strengthening his defences and in summoning to his aid the nearest savage tribes.

It was at first proposed to attack the post near the village, as that part was the most free from trees, and consequently offered less cover to the Indians. This, however, was objected to by Sinclair, as his fleet would be here exposed to the fire of the fort. It was finally concluded to land on the northeastern side of the island, although from this point they would be obliged to traverse its whole breadth, through a dense forest in order to reach the British position. After marching some distance through the wilderness, on arriving at a small clearing the detachment was fired on from all sides by the savages stationed in the surrounding woods. Major Holmes, at the head of a considerable force, was directed to charge the enemy, but as he was gallantly executing the order, he was shot down by a rifle ball. The fire, indeed, was so destructive that the advanced party was obliged to retreat to the main body, upon which the whole force retired to their boats, abandoned the enterprise and returned to Detroit. In consequence of this failure the British retained possession of Mackinac until the conclusion of peace.

With the death of Tecumseh the confederacy was dissolved, and a peace was concluded with the Ottawas, Chippewas, Miamis and Pottawatamies. This renowned chief deserves a passing notice. He possessed a noble figure, his countenance was strikingly expressive of magnanimity, and he was distinguished for moral traits far above his race. He was not remarkable for eloquence, or even for intellect; but he was a warrior in the broadest Indian sense of the word. Without the far-reaching views of Pontiac, or his hereditary rank, still in sudden action and desperate valor he showed himself superior to that chief; and, though a new man, he acquired unbounded influence, and placed himself above all competitors as the great champion of Indian rights. While his brother, the Prophet, was the principal manager of the confederacy in all that related to its organization and plans, he was its executive arm in the

field. There were other peculiarities by which he was no less distinguished. Like Pontiac, he manifested a deep interest in regard to the manners and customs of the whites; he would not sanction the barbarities practiced by the Indians, and he disdained the personal adornments in which they so much delighted. Although holding the rank of a Brigadier General in the British service, he pertinaciously adhered to his Indian garb, a deerskin coat with leggings of the same material, was his constant dress, and in this he was found dead at the battle of the Thames. During the latter years of his life he was almost incessantly engaged either in the Council or at the head of his warlike bands; and he sank at last on the field of his glory, with tomahawk in hand and the cry of battle upon his lips.

“Like monumental bronze, unchanged his look;
A soul which pity touch'd, but never shook;
Train'd from his tree-rocked cradle to his bier,
The fierce extremes of good and ill to brook;
Unchanging, fearing but the shame of fear,
A stoic of the woods, a man without a tear.”

The victory of Commodore Perry having secured the command of Lake Erie, Proctor's army having been routed, and the Indian confederacy broken up, nothing of especial interest in military affairs transpired in the territory during the remainder of the war, which terminated under the treaty of February 17, 1815.

On October 29th, 1813, General Cass, who had held the rank of Brigadier General United States Army since March 12th, 1813, was, by President Madison, made permanent Governor of Michigan Territory, and served until August 1st, 1831, having been appointed Secretary of War by President Jackson in July of that year. Governor Cass deeming a prompt and efficient re-organization of the militia in the territory important and necessary, on the 17th of December following designated to be recruited and mustered into service as active troops Legionary Corps in Detroit, First Regiment in the vicinity of Detroit, the Second Regiment in and around Monroe county, and a battalion on the Clinton and St. Clair rivers. The commanders were directed to report to Lieutenant Colonel Butler, Twenty-eighth United States Infantry, left in charge of the Post of Detroit.

It appears that during the remainder of the existence of the territory this force continued in service, with some changes in designation and with additions, including several independent companies in various parts of the territory.

In 1820 an act was passed authorizing the Governor to arrange the militia into divisions, brigades, regiments, battalions and companies, and appoint officers. In the meantime the active force had but very little of service, nothing occurring to require it, until early in the spring of 1832. A war with the Sac and Fox Indians, then occupying the country west of the Mississippi river, was inaugurated by an invasion of Northern Illinois and Southern Wisconsin, then in what was known as Michigan Territory, by Black Hawk, the chief of these Indians, who had repeatedly given assurances to the Government that he, with his people, would remain on the west side of the river, but had then, with his force, entered Illinois, murdering the inhabitants in considerable numbers, committing depredations upon their property and submitting them to continual fear for their lives; declaring that he would use all his endeavors, even unto war, to recover his old home on the east side of the river, which he had left under treaty.

At the commencement of the outbreak, quite a heavy Indian war seemed inevitable from all appearances, as the dispositions of surrounding tribes were not clearly understood; and in addition to the regular troops sent up the Mississippi river, a considerable force was sent from the seaboard and from other points to the seat of war, taking the lake route via steamers.

When the war commenced, Stevens T. Mason, being Secretary and acting Governor of Michigan, called on General John R. Williams, then in command of the militia, for troops, when an order was made on May 2d for a detachment of 250 officers and men of the First Regiment, which was promptly furnished, including one company of dragoons.

The command was on the march for Chicago at one o'clock the next day; it was reached, however, on the day following by an order from Governor Mason to General Williams, who was in command, to send the infantry back to Detroit and proceed with his staff and dragoons to Chicago.

Another detachment of five companies of infantry, raised in the southern portion of the State, commanded by General

Joseph W. Brown, had previously moved westward for the field of operations ; but on reaching Niles was ordered back and mustered out at Tecumseh.

A company of fifty cavalry from Brown's command, also accompanied General Williams. The General with his force, arrived in Chicago and, remaining some weeks awaiting developments of the war, made a reconnaissance to Napier's settlement, a point which the Indians at that time were threatening, and did not return to Michigan until after the capture of Black Hawk.

While the command was in Chicago the people of that city, on the 18th of June, at a public meeting, adopted and published an address to General Williams and the officers and soldiers of his command, warmly thanking them "for the prompt and efficient aid rendered by them when the citizens of Chicago were without protection and had not the means of defending themselves."

Although from circumstances beyond their control, the Michigan troops organized for the Black Hawk war, both infantry and cavalry, were not afforded the opportunity they so much desired of taking an active part in the war by meeting the enemy, yet their courage and patriotism were none the less. Having volunteered in a good cause and undertaken a march of great hardship on foot of several hundred miles, much of it over badly constructed roads, through a country, a large portion of which was then comparatively a wilderness, and withal scantily provided with supplies and equipment, entitled them to much well-deserved credit.

Major General Scott accompanied the detachment sent by the lakes, which became much demoralized and reduced by cholera, while General Atkinson commanded the forces sent by the Mississippi. The Indians had been attacked and driven from point to point, and were reached at their headquarters at the mouth of Rock river, and finding themselves hard pressed by the advancing troops, pushed up Black river, more anxious to escape their pursuers than to make war on them. The pursuit continued to the Wisconsin river, where they were overtaken, and a spirited fight ensued. The Indians, defeated, crossed the river in the night, still pursued closely by the troops. They were overtaken near the mouth of the Bad Axe

river, which runs into the Mississippi river about forty miles above Prairie du Chien. A steamer, the Warrior, had been sent up the Mississippi river with troops and armed with a six-pounder, to prevent their escape across the river. Thus surrounded, the Indians fell easy victims, and the battle soon terminated in the total destruction of a very large portion of Black Hawk's followers, men, women and children, and the capture and dispersion of the remainder; and thus ended the battle of Bad Axe, the final engagement of the Black Hawk War. The official reports give the loss by the whites at twenty-five killed and wounded. The entire loss by the army in the war, including the murders of settlers, and exclusive of the ravages of cholera, was estimated at about fifty, while the Indians were reported to have lost 230 killed in battle and a great number died of wounds, with a great loss by starvation, disease and drowning among the women and children. Black Hawk hastily made his escape with his Prophet from Bad Axe, and a large reward was offered for his capture. The fugitives pursued their lonely retreat to the dalles on the Wisconsin river, and were there captured by One-eyed-De-Cor-ra, a chief of the Winnebagos, who delivered them as prisoners of war on the 27th of August to General Street, Indian Agent at Prairie du Chien.

"I will weep for a season on bitterness' bed;
For my kindred are gone to the hills of the dead,
But they died not by hunger or lingering decay,
The steel of the white man hath swept them away."

The hostile chief was sent down the river with an escort in charge of Lieut. Jefferson Davis, of the regular army, to Jefferson Barracks, Mo., and held as a prisoner of war several months, a portion of the time confined at Fortress Monroe, from which he was taken in June, 1833, and escorted through the principal cities and towns for the purpose of enlightening him as to the power of the country, of which he seemed to be entirely ignorant, and finally reaching the Mississippi river he was released from arrest and lived in quiet on the banks of that river, where he died Oct. 23, 1838.

What is known as the Toledo war was one of very peculiar and harmless character, beginning in perspective and ending without collision, fight, or casualty, yet exhibiting on the start

on both sides a maximum of bombastic threatenings, prospective of possible coming war, with bloody battles and direful consequences; and although it brought out on the part of Michigan the most formidable military demonstration incident to a dispute between States as to territory, occurring in the United States, it ended in a wordy peace which has resulted in handing down the whole affair, both civil and military, in undeserved traditional and written ridicule.

In the beginning of 1835 the State of Ohio undertook to enforce jurisdiction over certain territory south of the Maumee Bay, which was then a portion of Michigan territory. The legislative council of Michigan on February 12th of that year passed an act "To prevent the exercise of foreign jurisdiction within the limits of the Territory of Michigan," making it a penal offence for any one to accept or exercise any public office in any part of the territory, except by commission from the United States or Michigan. On the 19th of the same month Acting Governor Mason, in a letter of instructions in detail to General Joseph W. Brown, then commanding a division of Michigan militia, says: "Under existing circumstances but one of two courses is left for Michigan to pursue. If Ohio continues to persevere in the attempt to wrest from us our territory, as she now meditates, in voluntary submission to encroachment upon our rights, or firm and determined opposition to her,—the latter, though painful to us, is preferable to the former, and must be decided upon. With this in view I have, with due regard to the important task assigned you, concluded to give you the control of the measures necessary to be adopted in consequence of the peculiar and unpleasant relations which I fear may soon exist between the civil authorities of Ohio and those of this territory."

On the 23d following, the Ohio Legislature asserting the right of that State, and declaring that measures should be taken to establish it, Governor Lucas placed a Major General of militia in command, with instructions to enroll the militia of the districts in dispute, for the purpose of protection, while running a boundary line which Ohio insisted on accomplishing. The matter of boundary had been laid before Congress, but failed to receive attention, and the Acting Governor of Michigan, considering his territory in possession, ordered

General Brown to hold himself in readiness to resist any attempt of Ohio to carry out the threatened measures, the right of Michigan being sustained by the Attorney General of the United States, and also by the President and his advisers. After a futile attempt at conciliation and considerable delay. Ohio still persisting in her claim, the President intimated by letter that if that State attempted running the line with an armed force he would have to interfere to prevent it by the power of the United States. Still affairs remained quiet, with an occasional difficulty, but without any military demonstration. It was ascertained, however, that in accordance with the views of the Ohio Legislature, a new county (Lucas) was to be organized over the disputed territory, and that court was to be opened at Toledo on the 7th of September, 1835, and that this move was to be protected by Ohio troops. To meet this contemplated action Governor Mason ordered out the Michigan forces, and with them in person moved on Toledo, but on arriving there no opposing force was encountered, and he peacefully took possession of the place, holding it for four days, when under an order of September 10th they returned and were disbanded at their various rendezvous, not having fired a gun at an enemy nor lost a man. The force numbered in all 1,055 officers and men, and were paid over thirteen thousand dollars for their services. Ohio finally succeeded by strong political influence in obtaining the disputed ground, but only with what was claimed to have been the consent of Michigan, in lieu of which she received what is now known as the Upper Peninsula.

Thus have been briefly recorded the military operations of the land of Michigan, the struggles of the inhabitants under the blighting effects of feudal surroundings, their courageous and trying contests with savages, for the protection of property and life, in common with the military power of several governments, of which they were from time to time the subjects. We have seen the French banner supplanted by the red cross of England without producing any beneficial change in the condition of the country; we have also seen the American banner surrendered to British invaders. But finally we have beheld the stars and stripes of our own Republic planted on the soil and flying over it as a State, and witnessed in her

extraordinary prosperity the wonder-working energy of her people under the free institutions of a government, the permanency of which has been so fully and permanently established in the results of a gigantic civil war, unequalled in history.

In June, 1835, Michigan adopted a Constitution and elected a State Government, with Stevens T. Mason as Governor, Nov. 3, 1835, which was accepted by Congress on June 15, 1836, and Michigan was admitted into the Union as a State upon condition of acceding to the boundary claims of Ohio. This condition, which was at first rejected by a convention called by the Legislature to consider it, was finally accepted by a second convention Dec. 15, 1836, and Michigan was formally declared a State by Act of Congress January 26, 1837.

In the winter of 1837-38 a very feeble effort at revolution, known as the Patriot war, broke out along the Canadian border, instigated by dissatisfied residents of Canada, encouraged by a lawless element on the American side, which gave the government and Michigan considerable annoyance and trouble. General Scott was ordered to the frontier to aid in preserving peace on the American side and enforcing the observance of the neutrality laws, who, with General Brady, then in command in Michigan, rendered efficient service.

On January 8th, 1838, Governor Mason with 220 volunteer militia embarked on the steamers Erie and Brady, to arrest the schooner Ann with stolen American arms on board and having committed a violation of neutrality; but the vessel escaping to one of the islands outside of American jurisdiction, the expedition proved entirely a failure.

On January 27th, the steamer Robert Fulton with three companies of United States troops in command of General Worth, arrived at Detroit from Buffalo. In the meantime the Michigan Brady Guard had been ordered out for special service on the line of the river. On February 12th, Governor Mason called out six companies of militia to proceed to Gibraltar, where a large and riotous force had congregated after the patriot defeat on Fighting Island. On arriving at the place with his force the Governor prevailed on the patriots to disband, but they soon collected again for another attempt.

During the summer and the early part of the winter, the

frontier was still in continual commotion, attacks being made at various points along the line. In December, a force of about 180 to 200, in command of General L. V. Bierce, of Ohio, boarded a steamer at Detroit, crossed over and landing about three miles above Windsor, marched to the British barracks, which they attacked and burned; meantime the British regulars being reinforced from Malden, the patriots were driven across the river to Hog Island (now Belle Isle), in canoes, with a loss of twenty-one killed, four captured and shot by order, twelve or more frozen to death, and sixty-five taken prisoners.

On December 9th General Scott had arrived from Buffalo for the purpose of maintaining neutrality; and later in that month about one thousand British troops had been concentrated at Windsor, but the war on that part of the frontier had practically ended.

In 1839, under the administration of Governor Woodbridge, the un-uniformed militia of the state was regularly organized, mostly on paper, however, with eight divisions of two brigades of two regiments each, including the few uniformed companies then in the State.

The war with Mexico was a result of the annexation of Texas, and brought about by a dispute over the boundary line, the Mexicans claiming the Nueces river as the line, while the United States insisted on the Rio Grande. Mexico, determined to enforce her claim, occupied with troops the territory in controversy, thereby bringing on the war, which was substantially inaugurated in the early part of August, 1845, by the occupation of a portion of the disputed territory at Corpus Christi by an army of the United States, under General Zachary Taylor, who, on March 11th, 1846, commenced a movement inland, meeting the Mexicans in severe battles at several points in Texas, defeating them in every instance in face of largely superior numbers, and driving them out of Texas across the Rio Grande. Pursuing them into their own territory, again meeting them in severe engagements, defeating and following them from point to point as far as Saltillo, and at Buena Vista, in his last and greatest battle on February 22nd and 23rd, 1847, where, against overwhelming odds, he routed Santa Anna, driving his native army

from the field, and occupied and held the entire northern portion of Mexico until the war ended.

In March, 1847, another army, in command of Lieutenant General Scott, entered Mexico at Vera Cruz, and advanced without delay on the City of Mexico, engaging the enemy in force at several points in heavy battles, but defeating him in every instance, driving him from stronghold to stronghold, until finally he attacked him within the fortifications defending that city, resulting in its capitulation with the entire Mexican army, which ended the war with that country, and maintained the claim to the territory in dispute.

Michigan fully performed the part required of her in the war by sending to the field one regiment of ten companies of infantry, together with one separate company as volunteers, and one company of dragoons and three companies of infantry for the regular army.

In October, 1847, an order was issued by direction of the President for mustering the regiment into the service of the United States, and the measures necessary to secure a compliance with that order were taken without delay by the proper authorities of the State.

The regiment was designated the First Regiment Michigan Volunteers, commanded by Colonel T. B. W. Stockton, and was mustered into the service at various dates during the months of October, November and December, 1847, and January and February, 1848.

The regiment remained in the field, rendering faithful and efficient service until the close of the war, when it returned to Michigan via New Orleans, Chicago and Mackinac to Detroit, where it was mustered out of service July 23, 1848.

The company of dragoons referred to was organized in Detroit by Captain Andrew T. McReynolds for the Third United States Dragoons. The three companies of infantry were for the Fifteenth Regular Infantry, commanded by Colonel George W. Morgan, of Ohio, with Joshua Howard, of Detroit, as Lieutenant Colonel. The separate company referred to was the Brady Guard Company of Detroit, Captain Morgan L. Gage, which was sent to Mackinaw and Saulte Ste. Marie to relieve companies of regulars for service in the war.

Following this war the uniformed militia was composed of

independent companies, raised from time to time throughout the State, made up from the best young men of the communities in which they were recruited. At the time of the breaking out of the civil war they consisted of twenty-eight separate companies, without any regimental formation, uniformed at their own expense, only partially equipped, but well armed;

“ For with a common shriek the general tongue
Exclaimed ! ‘ To arms,’ and fast to arms they sprang,
And valor woke that Genius of the land !
Pleasure, and ease, and sloth aside he flung,
As burst th’ awakening Nazarite his band,
When ‘gainst his treacherous foes he clenched his dreadful hand.”

The great war for the Union waged against secession and rebellion, inaugurated in 1861 by the armed uprising of the people of the Southern States and the attack on Fort Sumter, boldly assailing and defying the Government and insulting the flag, was sudden and alarming, gigantic in proportions, destructive in prosecution, prolonged in duration, but most triumphant and glorious in termination.

Michigan, from the beginning, was strong and earnest in sympathy with the Union cause, and, believing in its justice and right, she was pronounced in her loyalty, persistent and untiring in furnishing her contingent to the war to aid in saving the nation, was conspicuously present in force at its commencement and at its end. Thus fulfilling the sacred pledge of the people at the outbreak, consecrating their strong arms, their means, and if need be their lives, to defend and maintain the Government, under all circumstances and at all hazards and sacrifices, declaring that the emergency and necessity of the time must be met speedily and fully.

The war found the uniformed militia in better condition than might have been expected, considering its struggles for many years to acquire recognition or assistance as an element of the State government, but so far had failed. It was no wonder that it was regarded as delicate and feeble, and rather looked upon as a burlesque on the military profession. It proved, however, a valuable nucleus, from which rallied the earlier regiments sent to the war, giving them much of the discipline and *esprit de corps* which afterward characterized them in the field.

Notwithstanding the weakness of the State in a military point of view, as well as in her financial resources, she was strong in loyalty, courage and patriotism.

On retiring from the executive chair at the close of his term, in 1860, Governor Wisner delivered a cogent and eloquent address to the Legislature of 1861. In discussing the great question of secession, his language bore no shadow of flattering, no tinge of disaffection or doubtfulness, but in great earnestness and stirring eloquence and firmness breathing in every sentence devotion to the Union, invoking patriotism and denouncing treason, we quote some of his inspiring words: "This is no time for timid and vacillating councils, when the cry of treason and rebellion is ringing in our ears." "The Constitution, as our fathers made it, is good enough for us, and must be enforced upon every foot of American soil." "Michigan cannot recognize the right of a State to secede from this Union. We believe that the founders of our Government designed it to be perpetual, and we cannot consent to have one star obliterated from our flag. For upwards of thirty years this question of the right of a State to secede has been agitated. It is time it was settled. We ought not to leave it for our children to look after." "I would calmly but firmly declare it to be the fixed determination of Michigan that the Federal Constitution, the rights of the States, must and shall be preserved."

Governor Blair, the war Governor, followed Wisner in a profound and logical message, setting forth the true nature of our system of government, and after discussing the impending crisis, closed with these emphatic utterances: "We are satisfied with the Constitution of our country and will obey the laws enacted under it, and we must demand that the people of all the other States do the same; safety lies in this path alone. The Union must be preserved, and the laws must be enforced in all parts of it at whatever cost. The President is bound to this by his oath and no power can discharge him from it. Secession is revolution, and revolution in the overt act is treason and must be treated as such. The Federal Government has the power to defend itself, and I do not doubt that power will be exercised to the utmost. It is a question of war that the seceding States have to look in the face. They who

think that this powerful Government can be disrupted peacefully have read history to no purpose. The sons of the men who carried arms in the seven years war with the most powerful nation in the world to establish this Government will not hesitate to make equal sacrifices to maintain it. Most deeply must we deplore the unnatural contest. On the heads of the traitors who provoke it must rest the responsibility. In such a contest the God of battles has no attribute that can take sides with the revolutionists of the Slave States.

"I recommend you at an early day to make manifest to the gentlemen who represent this State in the two Houses of Congress, and to the country, that Michigan is loyal to the Union, the Constitution and the laws, and will defend them to the uttermost; and to proffer to the President of the United States the whole military power of the State for that purpose. Oh! for the firm, steady hand of a Washington or a Jackson to guide the ship of state in this perilous storm. Let us hope that we shall find him on the 4th of March. Meantime, let us abide in the faith of our fathers—'Liberty and Union, one and inseparable, now and forever.'"

The Legislature, backed by the strong Union sentiment of the people, and inspired by its own love of country, was quick in defining its position, and promptly flying its colors to the western breeze, declared in joint resolution the adherence of the State to the Union, pledging and tendering all its military power and material resources, and asserting that concession or compromise was not to be entertained, nor offered to traitors. Michigan was extremely fortunate in her executive. His example and utterances in public and private, full of loyalty, patriotism and courage, gave an abiding tone to public sentiment and inspired the troops. And although the intense prevailing patriotism of the people of Michigan was undoubtedly the main source of the high standard reached by her troops in this respect, yet it being so eminently inherent in her "War Governor," Austin Blair, and which he so eloquently imparted to them on every fitting occasion, impressing it on their minds with so much earnestness as to produce most beneficial and enduring effects.

The State was equally fortunate in her Legislative bodies, being composed of men thoroughly in sympathy with the

Union cause, opposing with great earnestness and ability any measures tinctured in the least with secession or even a shadow of compromise; and as a result their declarations in this respect were "stalwart" and decided, not minced in clipped or timid words, nor faint in expression, but bold, pronounced and defiant.

In the management of her interests at the National Capital the State was well represented, having in the several departments of the Government men of influence, who esteemed the reputation of their State, and were ever anxious and prompt to advance her cause. In her representatives in both Houses of Congress she was especially favored, and with these advantages Michigan unhesitatingly, but reluctantly, although hopefully and fearlessly, launched her bark on the turbulent sea of war on rebellion.

In the meantime, however, Sumter had been fired on. With the early dawn comes the expected shot, and like the deep thunder, awakes the morning echoes and rolls over the trembling waters of the bay. No single shot before ever bore such destinies on its darkened flight.

The tocsin of the gigantic and wicked rebellion, the key-note of civil war, had been heard all over the land; the National banner had been insulted by the fire of treason's batteries, when the loyal young men of Michigan sprang, as if by magic, to arms, to defend and maintain the National Union and protect its flag; to sustain the honor of their State and maintain their own glorious birthright as freemen. They vowed to God and their native land, and pledged their arms and their lives, that the beloved flag of their country should again wave triumphantly on the walls of Sumter, and over every State and inch of ground in the Union, and that the Republic should be saved and forever preserved.

Nothing was definitely undertaken by the State authorities until April 15th, when the surrender of the Carolina fortress was known throughout the land, and Michigan had been called on for her quota of the 75,000 volunteers required by the Government. The eventful hour had come with its emergencies and duties, and being fully realized by the people of the State, the excitement was intense, the uprising universal, and business was almost abandoned. Flags waved from every

public building and private dwelling, alike on the palace and on the cot, while the drum beat to music of the Union from our southern border to the far off and craggy shores of our great lakes. The volunteers in large numbers were assembling in various parts, demanding instant service, while the cheering and inspiring watch-fires of patriotism had been kindled on every hillside and in every valley.

“ Throughout the land there goes a cry;
A sudden splendor fills the sky,
From every hill the banners burst,
Like buds by April breezes nurst;
In every hamlet, home and mart,
The firebeat of a single heart
Keeps time to strains whose pulses mix
Our blood with that of Seventy-Six.”

The proclamation of the President, received April 15th, and his own anxiety regarding coming events, coupled with a determination for immediate action, brought Governor Blair to Detroit on the 16th, and after a short consultation with military men and prominent citizens, issued his proclamation for a regiment to fill the requisition of the Government, which was promptly responded to, and the tender of troops far exceeded the number required.

At the meeting of the citizens it was ascertained that the State Treasury was comparatively empty, and that the pressing call for means could not be immediately met; pledges were then and afterwards taken from the financial men of the State for \$100,000, the amount required, on which John Owen, the State Treasurer, raised the funds, afterwards refunded by the State. Thus all the pressing duties of the hour were speedily met.

The Governor had also issued a proclamation on April 2, 1861, convening the Legislature in extra session on the 7th of May. A session of four days resulted in the passage of laws endorsing the previous acts of the Governor, and clothing him with full authority to raise ten regiments, and also to effect a loan of one million of dollars, which was speedily accomplished. A “Soldiers’ Relief Law” was also wisely and generously enacted, providing aid for one year for the families of soldiers, according to their necessities, but not to exceed

fifteen dollars a month. The President's call for troops was promptly met by the muster-in of the First Regiment and its early movement on May 13th to the field, having the honor of being the first regiment reaching Washington from the West.

Hurriedly the advance of the Michigan contingent took up their line of march southward to defend the capital and protect the flag; and as their many friends, with warm and true hearts, grasped the hand and kissed the brow, with "God bless and protect you," in affectionate whispers, thought reached not so far into the future, nor mind conceived that the little band then bidding adieu to loved ones and homes, were but the "*advance guard*" of the large army that was to follow, and which in saving the *national life*, and in bringing so much honor to the State, was to give up to the sword, the bayonet and the bullet so much of life's best blood.

"We struck our camp at break of day, we marched unto the fight,
We laid the rose of pleasure down, and grasped the thorns of right;
The drum's tones were joy to us, the fife was sweetly shrill,
The flapping of our country's flag, it made our pulses thrill,"

Reaching Washington at a critical time, when Confederate troops flaunted their flag on Arlington Heights, claiming, defiantly, equality with the old banner of freedom floating from the dome of the National Capitol, when rebel pickets patrolled the banks of the Potomac and bivouacked under the old trees that shade the tomb of Washington.

In the meantime authority had been received from the War Department to raise three regiments, already in progress of recruitment and pressing for service; but at the same time stating that it was "*important to reduce rather than increase the number.*" Thus disappointing many companies outside of the organizations authorized, which led them to find service in other States.

This limited and mistaken policy of the Government was not in accord with the views of the Governor as to the necessities of the country at the time, nor in the immediate future; and deeming immediate preparation to meet the emergencies necessary, took the responsibility, and on June 19, 1861, established a "Camp of Instruction" at Fort Wayne for the officers and non-commissioned officers of the Fifth, Sixth and

Seventh Regiments, which was continued until August 1st following, when the regiments were speedily filled up and took the field in fine condition.

The course of instruction at the camp was that of the regular army, bringing about most beneficial results, not only in the regiments present, but which afterwards became infused into many others; and although the only camp of the kind organized during the war, it was universally recognized as a valuable and timely measure.

The great pressure for the acceptance of companies, outside those designated for the camp, continued unabated, while the personal applications and importunities of others for commissions seemed to be at a maximum, regardless of natural or acquired qualifications for the place. In his perplexing and responsible position, the Governor recognized ability and fealty to the cause as the test, more than personal friendship or political status.

Michigan, in quick response to all requisitions, continued a vigorous recruitment, sending regiment after regiment to the front, and had placed in the field up to December 31, 1861, thirteen regiments of infantry, three of cavalry, and five battalions of artillery, with a total strength of 16,475 officers and men.

“ From city's dome
And village home,
The thousands come,
Still marching to the 'Old Flag's' aid,
Each knows his part,
And every heart
Moves onward, calm and undismayed
By Treason's fiery dart.”

Meanwhile thirteen companies had found service in other States, thus sacrificing in their extreme patriotism and anxiety to be early in the field, the preferable service with the Michigan troops, thus entitling them to a credit not often given or ever remembered.

In his eloquent and forcible message of January, 1862, to the Legislature, then in extra session, and which was accepted at the time as the expression of the people of Michigan on the war question, the Governor occupied his usual strong ground for the Union, and was interestingly pungent against treason and

rebellion. In closing, he urged a more active prosecution of the war, advocating with vigorous earnestness the confiscation and seizure of rebel property wherever found, and its application to the maintenance of the armies in the field.

The Legislature, fully endorsing the sentiments of the message, was equally firm, forcible and acrimonious in a resolution on the same subject, and requesting the Governor to forward a copy thereof to the Michigan Senators and Representatives in Congress.

Recruiting was successfully being prosecuted in the early part of 1862, five regiments of infantry and three batteries of artillery being in rapid progress of recruitment; but as the summer approached, and immediately following the disastrous Peninsular campaign, it had entirely failed, rendering the completion of regiments almost impossible. Public meetings were resorted to as encouragement. One held at Detroit in July was furiously interrupted and dispersed by a mob of men supposed to be largely made up of Southern refugees and sympathizers with rebellion from Canada. This led to the assembling, in the open air at an early day, of an immense public gathering, composed of respectable and enthusiastic citizens of all classes and conditions, determined on establishing the right to hold and conduct such meetings. It was a complete success, severely rebuking the rebel element, avowing the most faithful and persistent prosecution of the war, pledging their personal encouragement, subscribing means at the time for the recruitment of troops, and urging the re-inforcement of the armies in the field.

This prompt action of the citizens had the desired effect, giving recruiting a new life and serving to end all demonstrations or personal efforts in the metropolis of the State, or elsewhere, opposing the raising of men for the armies of the Union.

The influence and action of this meeting spreading throughout the State, aided greatly in completing the regiments referred to and in the recruitment of eight others, all of which took the field in a little more than thirty days, an example of recruiting unequalled in this State, or perhaps in any other during the war.

Individuals of every degree of prominence had interested

themselves in recruiting; war meetings were held in almost every village and township in the State. Representatives of all classes converted themselves either into recruits or recruiting officers, and among the most efficient of the latter were ministers of the Gospel, some of whom led the men they had enlisted into the field.

The progress of the struggle and consequent calls of the President for men to re-inforce the armies in the field demanded the continuous raising of troops by the States, and Michigan, filling all her obligations had sent to the front, from the commencement of the war to December 31, 1862, six regiments of cavalry, twenty-seven regiments of infantry, nine batteries of light artillery, one regiment of engineers and six separate companies of infantry, which carried on their muster-in rolls 34,890 officers and men, not including the thirteen companies which found service in other States.

The patriotism of the men composing these regiments will not be questioned, as they entered the service in the darkest days of the war and when money could not have entered into the question, as neither Government, State nor local bounties were being paid, while, physically, mentally and morally the composite of the regiments was made up of the best young men of the State, and probably were not excelled in the troops of any other State, or in the armies of any other nation.

The military operations in the field in 1862 had not been much in favor of the Union cause, yet neither the army nor the people of the country seemed much discouraged. In Michigan there was no faltering or timid foreboding of coming disastrous events, but a firm and positive determination to press on to ultimate and speedy success.

In his message to the Legislature of 1863 the Governor commended the Michigan troops to their sympathy and support, alluding to their gallant and efficient services in the field in glowing, kindly words.

In February following the Legislature expressed in strong terms in a resolution the sentiments of the people on the war question, saying: "That we are unalterably opposed to any terms of compromise and accommodation with the rebels, while under arms and acting in hostility to the Government of the Union, and on this we express but one sentiment—un-

conditional submission and obedience to the laws and Constitution of the Union."

This Legislature also passed acts authorizing the payment of bounties, and generously appropriating \$20,000 to assist wounded and sick soldiers; to be distributed by agencies established by the Governor.

In February a draft was accomplished under the State law, with very small results. In March following Congress enacted a law making provision for drafting in localities where quotas were unfilled, assigning the necessary Government officers to carry it into effect. The system was continued until the close of the war, but was very little enforced in Michigan, as most of her troops preferred to volunteer.

A call was made by the President for 300,000 men specially intended for re-inforcing depleted regiments in the field. A proclamation was at once published, urging a prompt and effective response, in which the Governor said:

"This call is for *soldiers* to fill the ranks of the regiments in the field—those regiments which, by long and gallant service, have wasted their numbers in the same proportion that they have made a distinguished name, both for themselves and the State. The people of Michigan will recognize this as a duty already too long delayed. Our young men, I trust, will hasten to stand beside the heroes of Antietam, Gettysburg, Vicksburg, Stone River and Chickamauga.

"The hopes of the rebellion are steadily perishing. The armies of the Republic are in the midst of their country and they have not the power to expel them.

"Fill up the ranks once more and the next blast of the bugle for an advance will sound the knell of revolution and herald in the return of peace.

"Fellow citizens, let us do it *willingly, gallantly, joyously*. The people of Michigan have heretofore earned the gratitude of the country by their promptness and energy in the support of the Government."

This appeal was received by the people of the State with the same cordial response that had characterized their action on all previous demands of the Government, and they went to work with their usual alacrity and success.

During 1863, although only five regiments of cavalry, two of infantry and three batteries had been sent to the front, yet, together with recruits, nearly 14,000 had been recruited, and

since the commencement of the war a total of nearly 54,000 men had been sent by the State to the armies in the field.

In November, 1863, on information from the War Department, the military authorities in Detroit discovered a plot involving the complicity of the rebel government having in view the liberation of the rebel prisoners, all officers, on Kelly's Island, near Sandusky, Ohio, but it was frustrated by a timely report to the commander of the U. S. steamer Michigan, then lying near that island. An attempt to put it into force and accomplish the purpose was made by the seizure of the small steamer Philo Parsons, then running between Detroit and Sandusky, by an armed party led by Bennett G. Burley, holding a commission as master in the rebel navy, numbering, in all, about thirty persons, taking passage at Detroit and Amherstburg, in Canada, who on the way down took forcible possession of her and robbed her clerk of all the money on board; and in the meantime had taken and sunk the steamer Island Queen on her way to Detroit, making prisoners the crew and passengers. On reaching a short distance from the island, not receiving an expected signal, the project was abandoned and the steamer returned to Sandwich, where she was pillaged and then surrendered to the crew.

The important event occurring in the winter of 1863-1864 was the return of the veterans, 5,545 strong, who had re-enlisted for another term of service, entitling their respective organizations to the designation of veterans.

During the prosecution of the war there were many encouraging and promising features developed that indicated a successful and satisfactory end of the rebellion; but none more forcible or of greater import, or that will fill a brighter page in history, than the timely and glorious tribute voluntarily made to their country by the veterans of the war. Michigan was proud of her veterans, scarred, wounded and weather-beaten as they were; glorious evidences of faithful service, true bravery and gallant deeds, and fully appreciated their true devotion and great sacrifice.

A singular fact was established regarding the Michigan soldiers of the war, and particularly among the re-enlisted veterans, both by personal observation and the examination of descriptive lists, that a large proportion of those who stood

the service best and endured the longest, bore strong marks of the *nervo-sanguine* temperament, having florid complexions, some with red or tawny beards, most of them having brown or light brown hair, and some had red hair, while few had dark complexions, black hair or black beards, clearly showing that a very large number of both officers and men whose endurance enabled them to undertake and accomplish the most arduous service were of the complexion and temperament referred to. This was so noticeable in one of the Michigan regiments that the colonel, when he had a detail to make involving a necessity for great endurance in overcoming hardships, directed that sandy-haired men be selected.

Prominent among the operations of 1863 was the important battle of Gettysburg, in which the Michigan troops bore a conspicuous part—that battle, which in effect proclaimed with most pronounced force to the monster rebellion: “Thus far hast thou dared to come, but must advance no farther at thy peril; back to thy rebel den; henceforth thou canst only fight on the defensive, for thy aggressive power is broken, and thou must crumble to pieces until thou art dead, thy rebel spirit crushed to atoms, never to rise again.”

The Legislature of 1864 authorized an increase of State bounty, and townships and wards of cities were also empowered to raise moneys for the same purpose. In the meantime calls for men continued, and the Governor took the necessary means to respond, pointing out by proclamation, in explicit terms, the readiest and most feasible plans to raise the required quotas.

About this time, under an act of Congress, States were allowed to recruit colored troops from the States in rebellion, and authorized the appointment of agents for that service. This, however, the Governor declined to do, saying that our only resource will be that which has heretofore been found sufficient, the patriotism of our people. He did not, therefore, take advantage of the provisions of the act, as he did not approve of, nor would he encourage, this mode of raising soldiers for the armies, thereby coinciding with the views of most of the prominent generals of the army. Although it may here be stated that several eastern States were hasty in embracing the opportunity.

Regiments continued to be recruited and formed for service,

while the reports showed that from the beginning of the war to December 31, 1863, the State had furnished 53,749 men, and that during the first ten months of 1864 it had raised 27,616, exhibiting the striking fact that in that time more than half as many men had been recruited as were during the first three years of the war. The strongest evidence possible that Michigan had not weakened in her duty, nor lessened her early determination of prosecuting the war to a successful and satisfactory termination, the enlistments up to November 1st, 1864, giving 81,365 of a total credit. During the year only five regiments of infantry and two batteries of artillery had been organized, the regiments in the field receiving the balance of recruits.

In accordance with an act of the Legislature, approved February 5th, 1864, to enable the qualified electors of this State in the military service to vote at certain elections, the same were held amongst the Michigan troops in the service of the United States on the 7th day of November, 1864. They took place under the supervision of commissioners appointed, and were conducted in compliance with the instructions contained in letter of appointment by the Governor.

The result gave Henry H. Crapo, Republican, 9,612 votes for Governor, while 2,992 were given to William M. Fenton, Democrat.

In view of the exposed condition of the frontier in November, 1864, being then threatened by rebel refugees and agents of the rebel government, under pay, who had found cheerful welcome, congenial companions, and a safe asylum in Canada with the rebellion sympathisers, then unaccountably numerous, and also in view of the limited force of troops available for its defence, on the recommendation of Major General Hooker, then commanding the department, the Thirtieth Regiment of infantry was recruited and organized to serve for one year for duty along the Detroit and St. Clair rivers.

The approach of winter caused no abatement of activity in the Union armies, nor checked the increasing magnitude of the operations.

“The end of operations of the year found the Army of the Potomac in the trenches before Petersburg, holding Lee as in a trap, Sherman’s army in possession of Savannah, and Thomas successful in Tennessee.

"This memorable year was fraught with great results to the nation, effected by the unparalleled fighting of hosts of men, wading deep in human blood through carnage dense.

"The day and night advances of Grant's army on Richmond were, to the Northern people, movements producing intense anxiety, strong hope, fervent prayers for success, and sorrow and sadness for the patriots passing away.

"The desperate advance of Hood on Nashville had been most successfully met by General Thomas, his army completely defeated, routed and driven in hot haste southward in a most demoralized condition.

"General Sherman had gallantly driven the enemy from beyond Chattanooga and onwards, had battered down his strong works at Atlanta; then, bidding farewell to his friends, and placing both flanks of his noble army in air, swung off for the sea, leaving the nation in great ignorance and intense uneasiness as to his movements and safety, and is first heard from in the dispatch of General Howard, of his army, saying: 'We have had perfect success, and the army in fine spirits;' and then by General Sherman himself, sending to Abraham Lincoln a telegram covering the capture of Savannah as a Christmas present."

Michigan commenced 1865 with that determination to crush out the rebellion which characterized her soldiers and people so far during the war.

In his retiring message to the Legislature, Governor Blair alluded to the Michigan soldiers in the following beautiful and kindly language:

"Again, for the last time, I commend the Michigan troops to your continued care and support. They have never failed in their duty to the country or to the State. Upon every great battle-field of the war their shouts have been heard and their sturdy blows have been delivered for the Union and victory. Their hard-earned fame is the treasure of every household in the State, and the red blood of their veins has been poured out in large measure to redeem the rebellious South from its great sin and curse. At this hour they stand under the flag of their country, far away from home, in every quarter where the enemy is to be met—along the banks of the Father of Waters, in the great city at its mouth, on the Arkansas, in the captured forts of the Gulf, by the waters of the Cumberland, the Tennessee and of the Savannah, in the chief city of the Empire State of the South, among the conquering columns in the Valley of the Shenandoah, and in the trenches under the eye of the Lieutenant General in the great leaguer of Petersburg and Richmond. Alas, that they are also perishing of cold and

hunger, and disease, in the filthy rebel prisons and pestilential camps of the South. In every situation their bravery has now the approval of their commanders, and their heroic endurance of hardships has added lustre to their name. It is my sole regret at quitting office that I part with them. My earnest efforts for their good shall follow them while I live, and now, from this place, I bid them hail and farewell!"

Following Governor Blair, Henry H. Crapo took the executive chair, bringing to the service of the State and the nation strong and inherent patriotism, great ability, scrupulous honesty of purpose, and a most remarkable and pre-eminent degree of physical and mental energy, with almost continuous application, giving his administration great efficiency and much popularity. The Governor, in his inaugural message delivered to the Legislature, referring to the Michigan troops in the field, for whom he always entertained the most profound respect and the highest appreciation of their valuable services, says, with much eloquence and feeling, while alluding to the great loss of life among them, and of the cause in which they were then still engaged:

"This is indeed a fearful sacrifice to be made even in the cause of liberty, justice and humanity, and fearful is the penalty and terrible is the suffering which the authors and leaders of treason and rebellion deserve and must endure as a just consequence of this enormous crime. These brave men—the Michigan troops—are worthy of all praise. I commend them to your warmest sympathies, to your highest regards, to your active support. They have done heroic deeds on every battlefield; they have won a name for undaunted courage in every conflict with a deadly and persistent foe; they have endured hardships and privations without a murmur, and their loyalty and patriotism have never yet been tarnished. Those who have fallen upon the battlefield or on the march, or have died in hospitals—who now sleep in death, martyrs to the cause of human freedom—our gratitude, our sympathies can never reach. But of those who suffer through loss of them, and of those brave veterans who yet survive, we should ever be mindful. A nation's gratitude should ever be theirs; and justice, at least, should be their reward."

Nor were they forgotten by the Legislature of 1865, representing the people of the State; for early in the session the following concurrent resolution was adopted:

"That on this anniversary of the birthday of the Father of his Country, the thanks of this Legislature, and of the people of the State, are hereby tendered to the soldiers of Michigan; who promptly responded to the call of their country in its time of peril; and who by their fortitude and soldierly bearing under the privations and hardships of a soldier's life, in camp and field, through march and siege, and by their indomitable bravery and heroism on scores of battlefields, have won exalted honor to themselves and crowned with unfading glory the name and fame of Michigan."

The Legislature also adopted a resolution reaffirming the devotion of the Commonwealth to the Constitution and Government of the United States, and declaring the earnest determination of the people to do everything in their power to support and sustain the national administration in all measures for the vigorous prosecution of the existing war, the utter overthrow of armed rebellion and the punishment of traitors, until a permanent peace should be secured, based upon the submission of the rebels, the supremacy of the Government, and the establishment of the Federal Union in all its entirety, one and inseparable, throughout the entire land.

During the session, the following concurrent resolution was unanimously passed:

"WHEREAS, The Hon. Austin Blair, whose valedictory message was delivered to this Legislature on the fifth of January, eighteen hundred and sixty-five, has retired to private life;

"And, WHEREAS, The four years of his administration have been the most laborious, as well as the most perilous in the history both of the State and of the nation, with eleven of the most Southern States banded together in the most unjustifiable rebellion that the world has ever known;

"And, WHEREAS, Governor Blair's administration has been marked by eminent ability, rare integrity and unsurpassed success, as shown by the enlistments and organization into companies, regiments and batteries, in the most perfect military order, of over eighty thousand men, as brave, true, and patriotic as ever bared their breasts to any foe; therefore,

"Resolved, (the Senate concurring), That the thanks of the people of Michigan, through this Legislature, are hereby cordially tendered to ex-Governor Blair for the able and satisfactory manner in which he has, during his administration of the last four years, been able to conduct the affairs of the Government of the State."

It also authorized the payment of \$150 State bounty and empowered townships and wards to pay \$100. These bounties continued to be paid until April 14, 1865, when recruiting ended in the State.

Only one regiment had been sent to the front in 1865, but the State had received a credit since November 1st, 1864, of 8,683, including 430 enlisted during the war in the navy, sufficient to place a total credit at the War Department of 90,048 men. Of these, 14,855 fell under the Flag, many killed on the battlefield, or died of wounds or of disease consequent to the hardship in the field or by exposure in rebel prisons.

Under a resolution of the Legislature of 1869, approved by Governor Henry P. Baldwin, the Adjutant-General was instructed to prepare a Roll of Honor to contain the names of all Michigan soldiers who died while in the service. This has been accomplished, beautifully bound in two volumes, and placed in the State Library at Lansing.

During the war the State had raised and organized eleven regiments of cavalry, thirty-six of infantry, one of engineers and mechanics, one of twelve batteries of light artillery, two independent batteries and ten independent companies of infantry and sharpshooters, while thirteen companies had been recruited by other States.

Michigan had speedily and cheerfully responded to the several calls for troops, fully complying with every requirement of the Government. Michigan was earnest in the cause, and sought no other course than to fight on until a peace was successfully conquered and until every State was brought into submission to the power of the National Government and made to acknowledge allegiance to the Constitution and the laws of the land. Michigan, as evinced by the patriotism of her citizens at home, and the bravery of her troops in the field, was truly loyal and freely gave her influence, her means, and the blood of her people to put down the unjust, unreasonable and selfish rebellion.

On one occasion during the feudal times in Scotland, when chief met chief in battle array, two chiefs, with their adherents, were in one of the glens of that mountainous country, engaged in mortal combat, hand to hand and foot to foot, with *claymore* and *skein dhu*. One of them becoming much

worsted, excited the fealty of one of his clan, a very old Highlander, who stood on a projecting crag in the face of the mountain watching the contest with intense interest, too old to fight; he was merely a looker-on. He had several sons engaged for his chief. One falling by the hand of an opponent, the old man shouted in his Celtic tongue "*Another son for the Chief!*" And as one after another of his sons fell he continued the shout, "*Another son for the Chief!*" and again, "*Another son for the Chief!*" until the last had fallen. Then quickly drawing the broadsword of his fathers from its rusted scabbard he shouted with all the energy and enthusiasm of a true Highlander, "*Myself for the Chief!*" and rushing down the mountain side into the affray, was soon cut down and lay with his gallant sons in a gory bed.

So it was in many instances in Michigan during our recent war. Son after son went to the field, until all had gone, and one after another fell for the Union. Then the old father, in his agony of grief, with desperate loyalty and true patriotism in his heart, giving up all, family, friends and home, rushes to the front shouting, "*Myself for the Union!*"

The Michigan troops on the whole during the war encountered the enemy on 800 separate occasions and at different dates and places while upholding and defending the flag.

Of the services of Michigan men in the navy during the war there is, unfortunately, but little known, as reports thereof were not made to the State military authorities; but undoubtedly they were at their posts, distinguished officers and brave men under the flag of their country, with Foote, Dupont, Porter and Farragut, and received their proportion of the general credit.

Michigan was well represented at the surrender of Lee and Johnston—the termination and death of the rebellion; and a Michigan regiment captured the President of the so-called Confederacy, Jefferson Davis, in his inglorious flight to escape deserved punishment for his infamous treason and rebellion.

" We left thee no confederate band,
No symbol of the lost command,
To be a dagger in their hand,
From which we wrenched the sword."

When the regiments returned to their State they brought with them their colors, not one dishonored, neither blot nor

stain on their escutcheons, but all distinguished, glorious emblems, bearing record of many battles. Beneath their folds more than ninety thousand of the bravest sons of the State pressed forward through privations and amid dangers, to share largely and gloriously in nearly all the battles of the great rebellion. With unyielding devotion many gave up their lives that the nation might live, while the bleeding wounds and the trials and sufferings of others attested their fidelity to the Union and their valor in its behalf. And when their work was accomplished, in the day of their triumph, treasuring no spirit of resentment, with moderation unsurpassed, these heroes freely forgave their enemies, and restoring peace on unparalleled terms of generosity to the vanquished, betook themselves again to the quiet pursuits of life, by energy, industry and thrift, to renew prosperity and make good the waste of war.

The flags bear the National and State emblems, and are the cherished and venerated mementoes of great public services rendered by the soldiers of the State to the Republic, and of regimental bravery. Around them will cluster hallowed memories of State pride, of national grandeur and prowess, of individual heroism and patriotism, of fallen comrades and family bereavements.

“Those banners, soiled with dust and smoke,
And rent by shot and shell,
That through the serried phalanx broke,
What terrors could they tell!
What tales of sudden pain and death,
In every cannon's boom;
When e'en the bravest held his breath,
And waited for his doom.”

Under date of June 13th, 1865, the war department authorized the chief mustering officer of this State to turn over to the Governor, at his request, all the regimental colors of Michigan regiments then in his charge, or that might thereafter come into his possession under the provisions of the order referred to.

On the Fourth of July, 1866, those colors were formally presented in Detroit, through the Governor, to the State, and were deposited in its archives, to be sacredly kept and carefully preserved.

The setting apart of the national birthday for the purpose, was most appropriate. Its hallowed memories reminded the people of the gallant struggle of their forefathers in establishing the government, in the maintenance of which so many present had followed their flags to glorious victory.

A cordial invitation having been extended by the Governor to all who had served in the war, while the State authorities were cheerfully aided and liberally sustained by the citizens of Detroit, and the affair was honored by a magnificent celebration, and participated in by the most numerous assembly of the people from all parts of the State ever congregated within its borders; and for the purpose of honoring the day, and especially the occasion, as well as giving the people of the State an opportunity to witness the emblems of State prowess, and of patriotism, bravery and gallant services, a procession was arranged and carried into effect, under the direction of General James E. Pittman, who at the time was Inspector General of the State, and who was selected and appointed by the Governor as chief marshal of the day.

The procession was formed in divisions, under selected commanders, and made up of the several regiments carrying their old colors, presenting the finest appearance possible. It was remarkable with what pride each color-bearer held aloft the banner under which he had served, and with what elasticity of step and erect bearing the whole marched to the strains of martial music, to which they had been accustomed.

"I saw the soldiers come to-day
From battlefields afar;
No conqueror rode before their way,
On his triumphal car;
But captains, like themselves, on foot,
And banners sadly torn,
All grandly eloquent, though mute,
In pride and glory borne "

Those old flags, fluttering proudly in the breeze, bearing the mark of many bullets and the record of many battles, under which friends had fought and loved ones fallen, strengthened the people in their love of country, and made them firmer in their faith of the lasting union of the Republic. They were gladdened in heart at the presence of the veterans of the army

of Michigan. Yet, alas! their joy was mixed with sorrow; fourteen thousand and over of that army had joined the "Legion of the dead;" they had fallen under the flag on many battlefields. Most of them, in a spirit of humanity and veneration, have been gathered by kindly hands into the beautiful cemeteries, provided by a beneficent government, or by their friends at home, and now sleep in their windowless palaces of rest, where they will lie in peace until the last reveille; but some of them yet lie where their comrades left them, by the way-sides, on the sunny brows of many hills, in the dense forests, in the valleys and under the orange and palm trees, on the banks of rivers, under the deep, dark waters, and on the sea beach, where the restless waves forever chant their requiem. But they lie under the flag they defended and made stainless, and in the land they saved and made free.

"Thank God! there beams o'er land and sea,
Our blazing star of victory;
And everywhere, from main to main,
The 'Old Flag' flies and rules again."

At the close of the procession, which was one of the finest and most interesting displays ever witnessed in Michigan, the veterans were massed in front of the speaker's stand on Campus Martius, and delivered their flags to the Governor, when, after a prayer by Bishop S. A. McCoskry, the appropriate addresses were made by Mayor M. I. Mills, General Willcox and Governor Crapo.

The ceremony concluded with a benediction by Rev. George Duffield, when the veterans marched to the depot of the Michigan Central Railroad, where they partook of a substantial repast, prepared for them by the citizens, and where they were waited upon at tables by ladies and gentlemen of the city.

In the interior arrangement of the New Capitol at Lansing, the soldier and his services were not forgotten, but were most favorably and substantially remembered. With almost a profuse liberality, which should be fully appreciated, a large and commodious room was set apart, designated as the "Museum." This is the deposit of the "Michigan Battle Flags," properly placed in regimental order in a magnificent vertical case of large dimensions, novel in construction and of beautiful proportions, reaching almost to the ceiling, erected in the center

of the apartment, superbly mounted with heavy plate glass, which, coupled with the bullet-marked and battle-worn flags, is the grandest and most impressive monument to the soldiers of Michigan.

A beautiful idea is conveyed with regard to the American flag in the remarks of a little boy, whose parents resided near Bardstown, Kentucky, when a Michigan regiment was stationed there. Although very young, a mere child really, he had learned the difference in the appearance of Union and Confederate soldiers, having seen both, and he had also taken notice of the colors that composed the flags of both. One morning, discovering a beautiful rainbow arching the heavens, suspended, as it were, from the sky, he hurried to his mother, exclaiming with great earnestness, pointing upwards with both his little hands, "Mother! mother! oh, mother! God is a Union man!" His mother questioned him as to his reasons for thinking so; he replied, while a glow of delight flashed on his countenance, his little eyes beaming with brightness, "I know he is a Union man, mother, for I have seen his flag in heaven, and it is red, white and blue."

The successful operations of the Union armies having brought the war to a close by the complete overthrow of the rebel forces early in the spring of 1865, orders were at once issued to abandon all pending measures for the re-inforcement of the national arms and recruiting, as well as process under the drafting system ceased on the 14th of April.

With the surrender of the rebel army under General Lee, on the 9th of April, 1865, and the subsequent surrender of General Johnston's army in the same month, the war which had been waged against the Union ended, and soon after the troops belonging to the various States began to leave the field.

The Michigan troops being among the first to receive orders, the Twentieth Regiment arrived in the State June 4th, and others followed in succession up to June 10th, 1866, when the Third and Fourth Regiments of infantry reached the State, being the last belonging to the State to leave the field.

In June, 1865, anticipating the early return of troops from the field, a meeting of citizens was held in Detroit, when measures were taken to arrange for a proper reception at that place of the returning regiments, and to provide such refresh-

ments as they might stand in need of. With this in view, committees were selected and appointed.

The services of these committees were gratuitous, involving much labor, both early and late. They were aided in their attentive services by a number of ladies and gentlemen who gave their attendance at the tables, while the citizens generally contributed liberally, rendering the object an entire success. From June 4, 1865, down to June 10, 1866, 19,510 Michigan and 3,506 Wisconsin troops were hospitably received and substantially entertained.

Through the liberality of the people of Jackson, then a rendezvous for returned troops, like arrangements were made, and during the time before mentioned over 10,569 Michigan soldiers received kindly attention and bountiful entertainment on their arrival there.

On the 14th of June, 1865, Governor Crapo made a proclamation of welcome and thanks to the returning Michigan troops, of which the following is an extract:

"In the name of the people of Michigan I thank you for the honor you have done us by your valor, your soldierly bearing, your invincible courage, everywhere displayed, whether upon the field of battle, in the perilous assault, or in the deadly breach; for your patience under the fatigues and privations and sufferings incident to war, and for your discipline and ready obedience to the orders of your superiors. We are proud in believing that when the history of this rebellion shall have been written, where all have done well, none will stand higher on the roll of fame than the officers and soldiers sent to the field from the loyal and patriotic State of Michigan."

The English war with Russia in the Crimea brought prominently to notice Florence Nightingale; her superintending care and great service in affording relief to the wounded and sick in that great event, have given her a bright page in history, while her name and fame is known throughout the globe. The Florence Nightingales of America during our own war were numbered by thousands, and all are deserving of remembrance and honor imperishable. Michigan may well take credit for their distinguished and noble service in the war. They were numerous in the field from the commencement to the end, while both there and in the State they were patriotic to

an extreme, some of them even serving in the ranks, and a large portion of them, either individually or in associations, earnestly devoted their time and labor in many ways to supply wants of the absent soldier; their interest in his behalf was intense, while their industry for his benefit was continuous; and whether their names and services are made historical or not, they are engraven on the hearts of recipients while life lasts.

Stand by the flag, on land and on sea, was the motto of the women of Michigan, inspiring and scattering patriotism amongst the people, and in the ranks at the front. Never doubting, always hopeful, ever confident of success, trusting in God's help for the cause of liberty, humanity and right.

From the time that Sumter was fired on until Lee and Johnston laid down their rebellious arms, and Davis fled for his life, the Christian church in Michigan proved, by its strongly pronounced patriotism and manifest devotion to the cause of the Union, an element of great power. It encouraged by word and deed the soldier in the field, aided greatly in the recruitment of men by its approval of the war, and its expressed faith in its successful termination in favor of the Union, and by its forcible denouncement of rebels and those who sympathised with them and opposed the war.

The valuable services of the Michigan press cannot be overestimated. For the bold advocacy of the entirety of the Union, the strengthening of the hands of civil officials and moulding and holding public opinion in favor of loyalty to the government. The faithful encouragement of patriotism among the masses at home, and inspiring those at the front with courage and a heroism leading to gallant deeds, and with the cheerful hope of ultimate victory.

In Michigan as much care as possible was taken in the selection of officers by the Governor and those authorized to raise regiments, yet it was necessary to take into account their ability to recruit a required number of men, a custom more of necessity than of fitness; consequently military qualifications were more or less overlooked. Thus in the new regiments a defect in officers was more likely to prevail to a greater extent than in the regiments in the field. In the latter, with few exceptions, appointments and promotions were made from the

ranks, upon the recommendation of regimental commanders, ignoring the unmilitary and pernicious system of elections practiced among the troops of most other States, which unquestionably gave an opportunity to overlook merit, and had a tendency to cripple discipline.

In the Michigan regiments, when in the field, the promotions were mostly made within the regiments, and the appointments in a very large proportion were made from the ranks, the exception being a few from the regular service and from citizens to fill vacancies conditional to raising a certain number of men for the depleted regiments in which they were commissioned, a system which, although practiced in a limited manner, was never recognized by the appointing power with much favor, and in most instances such appointments were made on the request of colonels of regiments with a view to strengthening their commands.

During the war 4,007 officers were commissioned, of whom 2,067 left the State with regiments, 1,940 were promoted from the ranks, with the exception of ten appointed from the regular army, and a comparatively small number were commissioned to raise men in the State.

Although it was an accepted truth that a great number who were in the ranks of Michigan regiments in the field and who failed to be commissioned had the intelligence, education and ability requisite for competent and efficient commissioned officers, nevertheless, but a comparative few only could be made officers; but this fact was generally understood and accepted by the people, and is now, that the greater honor belonged to the men in the ranks, although but seldom mentioned in official reports, and, notwithstanding they had the least pay, they certainly did not fight the least; while the officers may be regarded as the motive power, the men in the ranks were the power itself, and are equally deserving of a place on public records, as well as in the history of the war.

A prophecy was generally advanced early in the war, and even up to its close, that idleness, debauchery and crime would characterize the release from military restraint, and the return to the State of so many men who had been exposed to a service, judging from results in other armies, likely to engender irregular, improvident and dissolute habits, leading to a law-

less course of conduct, tending to the most deplorable consequences.

Alas for the prophets! their sayings were but the idle babblings of the most distrustful of humanity. By over twenty years of experience since their return their theory has been completely refuted by a practice of honesty, virtue and thrift, most commendable, comparing favorably with our citizens generally; while many of them have filled high places of trust in the government of the country, as well as in the administration of the State, and in the ordinary avocations of life. They proved noble examples in war and are none the less in peace. While the young Frenchman proudly boasts of his father's membership in the "Legion of Honor of France," the young American may with justifiable pride reply, "my father belongs to the 'Grand Army of the Republic' of America!"

There was a time when many doubted the unity of the armies for a vigorous prosecution of the war; but they were only the doubtings of the timid and unthinking, forgetting the prevailing characteristics of the American soldiers, a strong inherent element of individuality unequalled in any other armies, intelligence and moral courage, centering in true patriotism, the honor of their State, love of family and of home, and of the respect of their fellow-citizens, all so forcibly illustrated in the service of the Michigan troops.

The high and imposing range of the Grampian Hills in the Highlands of Scotland are peculiarly wild, startling and rugged in their outlines, terminating in the bold projecting rock Craigellachie, that has withstood the storms of ages, the rendezvous of the Clan Grant in feudal war time, who had adopted its name as their "slogan" or war cry; and when resisting the furious charge of their enemy, the Highlanders would sound their war cry along the line, "Stand fast, Craigellachie," and they stood fast as the rock itself; so it was in many instances during our great war. The Michigan troops in the field, when resisting the charge of the Confederate horde, remembering the bold and firm stand of their State in the war, would pass along the line in spirit, if not in words, "Stand fast, Michigan," and they stood bold and firm as Craigellachie.

The war found the people of Michigan in the fullest enjoy-

ment of peace and advancing prosperity; their minds had not been burdened with the thought of a coming exigency, which was to test their patriotism and tax their energies and resources to such an extreme. The idea had never entered their minds that the first gun fired from Sumter was the first demand for men which was to be continued until 90,000 and over would take the field, of which over 14,000 would never return alive, or that it gave the first notice of a series of drafts on their treasury, which would finally reach over fourteen millions of dollars. But the story had to be told and the drafts were fully honored.

The Michigan "contingent" in the war was largely from the more respectable young men of the community. Coming from all avocations of life, many of them had required obedience of others at home; they had to obey others in the field. Yet they were patient under the most rigid discipline; persistent in the long and tedious march, cheerful and untiring in the trenches, apt in experiment, and most ingenious in construction, they added to all these qualifications and merits true courage in the field, while almost every important action illustrated their heroism, and almost every battlefield was consecrated with their blood. Their services were eagerly sought for by all the best Generals, whether to construct a defence, lead a "forlorn hope" or charge a battery.

The alarming tocsin had been sounded, the momentous shot had been heard, the flag had been insulted, the laws of the land defied, treason and armed rebellion defiant and war inevitable. Michigan was prompt at the outset; no question as to cause, no thought as to result, no summary of cost nor estimate of lives to be lost. All! all were merged in the immediate exigency of the time. Michigan troops, eager for the conflict, were early at the front and were found there at the close.

In 1861 they had served with McDowell at Blackburn's Ford and Bull Run, with Grant at Shiloh, with McClellan in West Virginia. In 1862 they were with him on the Peninsula and in Maryland, with Banks in the Valley of the Shenandoah, in Louisiana with Butler, in Missouri with Mulligan, and with Pope in Virginia. In 1863 the campaigns of Hooker in Virginia and Mead in Pennsylvania found them at the front.

Burnside had them at Knoxville, Rosecrans at Stone River and Chickamauga, Grant at Vicksburg and Mission Ridge. In 1864-5 they were with Thomas at Nashville, and prominent in the great flanking movements with Grant in the Wilderness, at Spottsylvania, North Anna, Cold Harbor, and in the great leaguer of Petersburg. They were on the wing with Sherman on his matchless and victorious flight to the sea; with Sheridan and Custer in their brilliant achievements in the valley, and with Grant at Appomattox, the death place of the confederacy.

The end of the war found a veteran army in the field, tried and true, which had triumphantly passed through a desperate national contest. Although having only been trained and disciplined during a few years of service, it evinced a surprising development of military capacity, courage and endurance in the field, equal if not superior to the armies of other nations after many years of training which war brings with it.

The histories of the time bear witness to the patriotism of the States which in the time of great peril gave their strong arms and means to preserve the nation; while Michigan proudly cherishes the remembrance of the valor of her troops as peculiarly her own, who in the great struggles of a prolonged and gigantic warfare reflected undying lustre on her own escutcheon.

The following table shows the aggregate numbers in detail of the credits allowed to each county in the State, during the operations of the enrollment system, together with the number of men enlisting previous to the adoption of that system, and reported to the Adjutant General's office as residents thereof, and the total, approximately, of the number of troops furnished by the several counties from the beginning to the close of the war:

COUNTIES.	Enlisted in Army under Enrollment system.	Veterans Re-enlist- ed in Field.	Enlisted in Navy.	Drafted Men Com- muting.	Product of Draft in Men.	Term of Service Credited			Total Credit in Num- bers under Enroll- ment System.	Enlistments previ- ous to Sep. 19, 1863.	Approximate Totals during War
						1 Year.	2 Years.	3 Years.			
Allegan	736	96	19	78	215	530	15	589	1,134	1,041	2,175
Antrim	11		3	1	7	18		10	28		38
Alpena	39			9	3	8		43	51	7	58
Barry	664	66	11	47	88	301		515	816	809	1,625
Benzie	25	1		2	42	47		23	70		70
Bay	264	25		37	20	35		311	346	165	511
Branch	788	173	55	79	191	474	3	809	1,286	1,490	2,776
Berrien	996	246		49	164	555		900	1,455	1,724	3,179
Cass	709	119	17	55	139	374		665	1,139	793	1,932
Calhoun	1,423	295	42	123	53	690	25	1,221	1,936	1,942	3,878
Cheboygan	9			2	5	1		15	16	15	31
Clinton	558	116		15	57	155		591	746	860	1,606
Chippewa	4	1				1		4	5	16	21
Delta	1			10	13	12		12	24		39
Emmet	12				6	6		12	18	21	39
Eaton	697	123		59	66	346	1	598	945	796	1,741
Genesee	807	206	7	98	65	290		893	1,383	1,335	2,518
Gratiot	152	18		13	153	156		180	336	310	646
Grand Traverse	80		8	3	6	35		62	97	74	171
Hillsdale	1,230	111	1	59	178	442		1,137	1,579	1,319	2,938
Houghton	137	13						150	150	310	460
Huron	74	12		30	83	62		137	199	143	342
Ingham	819	98		51	122	479	4	607	1,090	1,067	2,097
Ionia	873	79		36	59				1,047	1,417	2,464
Isabella	53	6		1	26	40		16	86	51	137
Iosco	6	2	1	5	12	14		12	26	1	27
Jackson	1,311	208	37	106	91	554	8	1,191	1,753	1,479	3,232
Keweenaw	30					1		19	20	99	119
Kent	989	354	10	93	197	446	4	1,193	1,643	2,571	4,214
Kalamazoo	1,246	205	66	53	91	612	3	1,016	1,661	1,560	3,221
Livingston	710	89	7	21	137	258		706	964	923	1,887
Lenawee	1,917	224	14	93	99	563	7	1,807	2,377	2,060	4,437
Leelanaw	35			1	44	43		35	78	30	98
Lapeer	620	133	3	11	84	209		635	844	932	1,776
Monroe	691	115	1	37	235	344	2	733	1,079	1,191	2,270
Montcalm	251	16		25	61	138		215	353	287	640
Macomb	900	149	17	16	134	320	2	894	1,216	1,144	2,360
Menominee	19							19	19		19
Marquette											
Schoolcraft	70	2						72	72	193	265
Muskegon	248	29	6	40	34	104		253	357	379	736
Mecosta	38	2		28	24	31		61	92	67	159
Mason	25			4	18	22		25	47	12	59
Manitou				2	6	2		6	8	2	10
Manistee	69			6	7	5		77	82	6	88
Mackinac	26			11	10	8		39	47		17
Midland	54	10		7	3	6		68	74	54	129
Newaygo	121	3		24	55	103		110	213	199	412
Ontonagon	61	1						62	62	192	254
Oakland	1,622	212	18	16	218	578	2	1,506	2,086	1,634	3,718
Oceana	85	1		15	22	37		86	123	100	223
Ottawa	669	106	5	57	37	292	4	578	871	673	1,547
Shiawassee	184	129	7	32	31	159	1	526	686	1,067	1,753
St. Joseph	1,125	96	10	94	89	534	7	873	1,111	1,422	2,536
Sanilac	235	81		7	56	62	1	316	379	402	781
St. Clair	779	199	20	20	185	231	1	971	1,203	1,378	2,581
Saginaw	871	123	8	75	47	166		988	1,154	885	2,039
Tuscola	211	39		44	59	55		298	353	311	664
Van Buren	605	138	8	52	136	341	4	594	939	945	1,884
Washtenaw	1,741	334	19	124	58	723	6	1,577	2,396	1,778	4,084
Wayne	3,352	722	32		357	703	5	3,635	4,343	4,870	9,213
TOTALS	32,338	5,545	483	1,982	*4,281	13,026	105	31,498	44,629	44,544	89,173

* The total sum paid into the Treasury Department of the United States by drafted citizens of Michigan as commutation money, was \$594,600.00.

The product of soldiers and credits yielded by the several counties, as exhibited in the table immediately foregoing, is in its aggregate, as previously intimated, below the total number known to have been furnished by the State.

The report of the Adjutant General's Department for 1864 showed that according to the records the actual number of men furnished by Michigan from the beginning of the war to November 1st, 1864, was 81,365.

Add the number of men commuting.....	1,982
And the total credits to that time were.....	83,347
The number of men credited by enlistment and draft from November 1st, 1864, to the close of the war, as shown by the preceding tables, was.....	9,382
Making the total <i>credits</i> of the State from April, 1861, to April, 1865, the entire period of the war, as shown by the records....	92,729
Deducting from this aggregate the number of men commuting....	1,982
There is left a total of numbers actually furnished in men of. . .	90,747

These figures do not include men enlisted in regiments of other States, and are believed to be substantially correct. There is a discrepancy, however, between them and the tables of the War Department, as will be seen by the subjoined letter from the Provost Marshal General:

WAR DEPARTMENT.

PROVOST MARSHAL GENERAL'S OFFICE,
WASHINGTON, D. C., Sept. 2d, 1865.

His Excellency H. H. Crapo, Governor of Michigan, Lansing :

SIR—I have the honor to inform you that the number of men furnished by the State of Michigan from April 17th, 1861, to April 30th, 1865, is ninety thousand and forty-eight (90,048), without reference to periods of service, which varied from three months to three years.

I have the honor to be, sir, very respectfully your obedient servant,

JAMES B. FRY,
Provost Marshal General.

From returns made by the Provost Marshal General it appears that the aggregate quotas charged against the several States under all the calls made by the President from April 15th, 1861, to April 15, 1865, amounted to 2,759,049, and that the aggregate number of men credited on the several calls and put into the service during the same period was

2,656,553, leaving a deficiency on all calls when the war closed of 102,496, which would have been obtained in full if recruiting and drafting had not been discontinued. This number does not embrace the "emergency men" put into the service at various times during the summer of 1863, amounting to upward of 120,000 men, who served periods of two or three weeks.

The following tables, furnished to Congress by the Secretary of War, in compliance with a resolution of the House of Representatives adopted in December, 1865, give the latest official information with respect to the number of volunteers called for by the President at various periods:

NUMBER OF TROOPS FURNISHED UNDER DIFFERENT CALLS.

DATE OF CALL.	Number of Men.	Terms of Enlistment.
Call of April 15, 1861, for 75,000 men.....	98,235	3 months.
	2,715	6 months.
Call of May 3, and July 22 and 25, 1861, for 500,000 men. {	9,056	1 year.
	30,952	2 years.
	657,863	3 years.
Call of July 2, 1862, for 500,000 men.....	419,627	3 years.
Call of August 4, 1862, for 300,000 men.....	86,860	9 months.
Proclamation of June 15, 1863, for Militia.....	16,361	6 months.
Call of October 15, 1863, and February 1, 1864, for 500,000 men.....	374,807	3 years.
Call of March, 1864, for 200,000 men.....	284,021	3 years.
Militia Mustered into Service in Spring of 1864.....	83,612	100 days.
	149,356	1 and 2 years
Call of July 18, 1864, for 500,000 men.....	234,798	3 years.
	728	1 year.
	151,105	1 year.
Call of December 19, 1864, for 300,000 men.....	5,076	2 years.
	48,065	3 years.
	312	4 years.

NUMBER OF TROOPS FURNISHED BY STATES.

STATE.	Aggregate.	Aggregate Reduced to 3 years' Standard.
Maine.....	71,745	56,595
New Hampshire.....	34,605	30,827
Vermont.....	35,256	29,052
Massachusetts.....	151,785	123,844
Rhode Island.....	23,711	17,878
Connecticut.....	57,270	50,514
New York.....	455,568	380,980
New Jersey.....	79,511	55,785
Pennsylvania.....	366,326	267,558
Delaware.....	13,651	10,303
Maryland.....	49,730	40,692
West Virginia.....	30,003	27,653
District of Columbia.....	16,872	11,506
Ohio.....	317,133	239,976
Indiana.....	195,147	152,283
Illinois.....	258,217	212,694
Michigan.....	*90,119	80,865
Wisconsin.....	96,118	78,985
Minnesota.....	25,034	19,675
Iowa.....	75,860	68,182
Missouri.....	108,773	86,192
Kentucky.....	78,540	70,348
Kansas.....	20,097	18,654
TOTALS.....	2,653,062	2,129,041

* The final credit allowed Michigan by the Provost Marshal was 90,048.

The following is taken from the same work, made up from the Provost Marshal General's report:

"The recorded number of deserters was 268,530, although the Provost Marshal General considers that about one-fourth of these were subsequently accounted for. More than 76,000 were arrested, but probably as many as 125,000 different enlistments failed to yield soldiers to the army, although they led to their entry upon the official record.

"In general, the manufacturing States, as for instance, Massachusetts, Connecticut, Rhode Island, New York and New Jersey, rank high in the column of desertions; and this result is to be attributed to the fact that such States are dotted with towns and cities.

"It appears beyond dispute that the crime of desertion is especially characteristic of troops from large cities and of the districts which they supply with recruits. The ratio per thousand of deserters to credits throughout the loyal States is 62.51.

"The respectable and industrious part of this population did, indeed, produce a mass of faithful troops, but with these were mixed a vast number of adventurers unworthy of any country, who had no affection for the Republic, and only enlisted for money."

TABLE, giving the dates and places of muster of Michigan regiments, batteries and companies, the dates at which they left the State, together with the dates and places of muster out, and the dates at which they returned to the State.

REGIMENTS.	MUSTERED IN.		LEFT THE STATE.		MUSTERED OUT.		RETURNED TO STATE.	
	Date.	Place.	Date.	Place.	Date.	Place.	Date.	Place.
1st Eng. and Med.	Oct. 29, 1861	Marshall.....	Dec. 17, 1861	Nashville, Tenn.....	Sept. 22, 1865	Jackson, Mich.	Sept. 25, 1865	Jackson, Mich.
1st Cavalry	Sept. 13, 1861	Detroit.....	Sept. 29, 1861	Salt Lake City, Utah.....	Mar. 10, 1866	at Salt Lake City.	Paid and Disb'd	at Salt Lake City.
2d "	Oct. 2, 1861	Grand Rapids	Nov. 14, 1861	Macon, Ga.....	Aug. 17, 1865	Jackson, Mich.	Aug. 26, 1865	Jackson, Mich.
3d "	Nov. 1, 1861	"	Nov. 28, 1861	San Antonio, Texas.....	Feb. 12, 1866	"	Mar. 10, 1866	"
4th "	Nov. 29, 1862	Detroit.....	Sept. 26, 1862	Nashville, Tenn.....	July 1, 1865	"	July 10, 1865	"
5th "	Aug. 30, 1862	"	Dec. 4, 1862	Ft. Leavenworth, Kan.....	June 22, 1865	"	July 1, 1865	"
6th "	Oct. 13, 1862	Grand Rapids	Dec. 10, 1862	"	Nov. 21, 1865	Jackson,	Nov. 30, 1865	Jackson,
7th "	Jan. 16, 1863	"	Feb. 20, 1863	"	Dec. 13, 1865	"	Dec. 20, 1865	"
8th "	May 2, 1863	Mt. Clemens.....	May 20, 1863	Nashville, Tenn.....	Sept. 22, 1865	"	Sept. 28, 1865	"
9th "	May 19, 1863	Coldwater.....	Dec. 1, 1863	Lexington, N. C.....	July 21, 1865	Detroit,	July 30, 1865	Detroit,
10th "	Nov. 15, 1863	Grand Rapids	Dec. 1, 1863	Memphis, Tenn.....	Nov. 11, 1865	Jackson,	Nov. 13, 1865	Jackson,
11th "	Dec. 10, 1863	Kalamazoo.....	Dec. 17, 1863	"	"	"	"	"
1st Light Artillery A.	May 28, 1861	Coldwater.....	June 1, 1861	Jackson, Mich.....	July 28, 1865	"	July 12, 1865	"
" B.	Nov. 28, 1861	Grand Rapids	Dec. 17, 1861	Detroit, Mich.....	June 14, 1865	"	June 6, 1865	"
" C.	Sept. 17, 1861	"	Dec. 17, 1861	"	June 22, 1865	"	June 13, 1865	"
" D.	Sept. 17, 1861	White Pigeon	Dec. 17, 1861	Jackson, Mich.....	Aug. 3, 1865	"	July 22, 1865	"
" E.	Jan. 6, 1862	Marshall.....	Dec. 17, 1861	"	July 30, 1865	"	July 16, 1865	"
" F.	Jan. 17, 1862	Coldwater.....	Mar. 3, 1862	"	July 1, 1865	"	June 21, 1865	"
" G.	Jan. 17, 1862	Kalamazoo.....	Feb. 12, 1862	"	Aug. 6, 1865	"	Aug. 2, 1865	"
" H.	Mar. 6, 1862	Monroe.....	Mar. 13, 1862	"	Aug. 22, 1865	"	July 4, 1865	"
" I.	Aug. 29, 1862	Detroit.....	Dec. 4, 1862	Detroit, Mich.....	July 14, 1865	"	July 6, 1865	"
" K.	Feb. 29, 1863	Grand Rapids	Feb. 1863	Jackson, Mich.....	Aug. 22, 1865	"	Aug. 19, 1865	"
" L.	April 16, 1863	Coldwater.....	May, 1863	"	Aug. 22, 1865	"	Aug. 12, 1865	"
" M.	June 30, 1863	Mt. Clemens.....	May, 1863	"	Aug. 1, 1865	"	July 12, 1865	"
13th Battery.....	Jan. 38, 1864	Grand Rapids	Feb. 3, 1864	"	July 1, 1865	"	June 22, 1865	"
14th "	Jan. 5, 1864	Kalamazoo.....	Feb. 3, 1864	"	Sept. 21, 1865	"	June 21, 1865	"
Merrill Horse B.	Sept. 6, 1861	Fayette, Mo.....	Sept. 3, 1861	Nashville, Tenn.....	Sept. 21, 1865	at Nashville.	Paid and Disb'd	at Nashville.
" L.	Sept. 6, 1861	"	Sept. 3, 1861	"	Sept. 21, 1865	"	"	"
" L.	Jan. 1, 1863	Detroit.....	"	"	Sept. 21, 1865	"	"	"
1st U. S. S. Co. C.	Aug. 26, 1861	"	"	"	"	"	"	"
" J.	Aug. 4, 1862	"	May 27, 1862	"	"	"	"	"
" K.	Mar. 20, 1862	"	"	"	"	"	"	"
" B.	Oct. 4, 1861	"	May 13, 1861	Detroit, Mich.....	Aug. 7, 1861	"	Aug. 6, 1861	Detroit, Mich.
1st Infantry 3 mos.	May 1, 1861	"	Sept. 16, 1861	Jeffersonville, Ind.....	July 9, 1865	"	July 12, 1865	"
" 3 years.....	Sept. 16, 1861	Ann Arbor.....	"	"	"	"	"	"

TABLE, giving the dates and places of muster of Michigan regiments, etc.—CONTINUED.

REGIMENTS.	MUSTERED IN.		LEFT THE STATE		MUSTERED OUT.		RETURNED TO STATE.	
	Date	Place	Date	Place	Date.	Place.	Date.	Place.
2d Infantry	May 25, 1861	Detroit	June 5, 1861	Delaney House, D. C.	July 28, 1865	Delaney House, D. C.	Aug. 1, 1865...	"
3d "	June 10, 1861	Grand Rapids	June 13, 1861	Detroit, Mich.	May 20, 1864	Detroit, Mich.	June 20, 1864...	"
3d " reorganized	Oct. 15, 1861	"	Oct. 20, 1861	Victoria, Texas.	June 25, 1866	Victoria, Texas.	June 10, 1866...	"
4th "	June 10, 1861	Adrian	Oct. 22, 1861	Detroit, Mich.	June 28, 1864	Detroit, Mich.	June 26, 1864...	"
4th " reorganized	Oct. 14, 1861	"	Oct. 22, 1861	Houston, Texas.	May 26, 1866	Houston, Texas.	June 10, 1866...	"
5th "	Aug. 28, 1861	Detroit	Sept. 11, 1861	Jacksonville, Ind.	July 5, 1865	Jacksonville, Ind.	July 8, 1865...	"
6th H. A.	Aug. 20, 1861	Kalamazoo	Aug. 30, 1861	New Orleans, La.	Aug. 21, 1865	New Orleans, La.	Aug. 30, 1865...	Jackson,
7th Infantry	Aug. 22, 1861	Monroe	Sept. 5, 1861	Jeffersonville, Ind.	July 3, 1865	Jeffersonville, Ind.	July 7, 1865...	"
8th "	Sept. 23, 1861	Detroit	Oct. 25, 1861	Nashville, Tenn.	Sept. 13, 1865	Nashville, Tenn.	Aug. 3, 1865...	Detroit,
9th "	Oct. 15, 1861	"	April 22, 1862	Louisville, Ky.	Sept. 16, 1865	Louisville, Ky.	Sept. 23, 1865...	Jackson,
10th "	Feb. 6, 1862	Flint	Dec. 9, 1861	Nashville, Mich.	July 19, 1865	Nashville, Mich.	Sept. 23, 1865...	"
11th "	Sept. 24, 1861	White Pigeon	Mar. 18, 1865	Sturgis, Mich.	Sept. 30, 1864	Sturgis, Mich.	Sept. 23, 1864...	Sturgis,
12th "	Mar. 16, 1863	Jackson	Mar. 18, 1865	Nashville, Tenn.	Feb. 15, 1866	Nashville, Tenn.	Sept. 23, 1865...	Jackson,
13th "	Mar. 5, 1863	Niles	Feb. 12, 1862	Little Rock, Ark.	July 25, 1865	Little Rock, Ark.	Feb. 27, 1866...	"
14th "	Jan. 17, 1863	Kalamazoo	April 17, 1862	Louisville, Ky.	July 18, 1865	Louisville, Ky.	July 27, 1865...	"
15th "	Feb. 13, 1863	Ypsilanti	Mar. 27, 1862	Little Rock, Ark.	Aug. 13, 1865	Little Rock, Ark.	July 21, 1865...	Detroit,
16th "	Mar. 20, 1862	Monroe	Sept. 16, 1861	Jeffersonville, Ind.	July 8, 1865	Jeffersonville, Ind.	Sept. 1, 1865...	"
17th "	Sept. 8, 1861	Detroit	Aug. 27, 1862	Delaney House, D. C.	June 3, 1865	Delaney House, D. C.	July 12, 1865...	"
18th "	Aug. 21, 1862	Hillsdale	Sept. 4, 1862	Nashville, Tenn.	June 26, 1865	Nashville, Tenn.	July 2, 1865...	Jackson,
19th "	Aug. 26, 1862	Dowagiac	Sept. 14, 1862	Washington, D. C.	June 10, 1865	Washington, D. C.	June 13, 1865...	Detroit,
20th "	Sept. 25, 1862	Jackson	Sept. 1, 1862	Delaney House, D. C.	May 30, 1865	Delaney House, D. C.	June 4, 1865...	Jackson,
21st "	Aug. 19, 1862	"	Sept. 12, 1862	Washington, D. C.	June 8, 1862	Washington, D. C.	June 13, 1865...	Detroit,
22d "	Sept. 4, 1862	Fontana	Sept. 12, 1862	Nashville, Tenn.	June 26, 1862	Nashville, Tenn.	June 30, 1865...	"
23d "	Aug. 29, 1862	Detroit	Sept. 18, 1862	Salisbury, N. C.	June 28, 1862	Salisbury, N. C.	July 7, 1862...	"
24th "	Sept. 13, 1862	E. Saginaw	Aug. 20, 1862	Detroit, Mich.	June 30, 1865	Detroit, Mich.	July 2, 1865...	Jackson,
25th "	Aug. 15, 1862	Detroit	Sept. 23, 1862	Alexandria, Va.	June 30, 1865	Alexandria, Va.	July 2, 1865...	"
26th "	Sept. 27, 1862	Kalamazoo	Dec. 13, 1862	Delaney House, D. C.	June 4, 1865	Delaney House, D. C.	July 29, 1865...	Detroit,
27th "	Dec. 12, 1862	Jackson	April 12, 1863	Raleigh, N. C.	June 5, 1865	Raleigh, N. C.	June 8, 1866...	"
28th "	April 10, 1863	Ypsilanti	Oct. 26, 1864	Murfreesboro, Tenn.	Sept. 6, 1865	Murfreesboro, Tenn.	Sept. 12, 1865...	"
29th "	Nov. 10, 1864	Kalamazoo	Oct. 6, 1864	Detroit, Mich.	June 30, 1865	Detroit, Mich.	Sept. 12, 1865...	at Detroit,
30th "	Oct. 3, 1864	Saginaw	Didn't leave ..	Delaney House, D. C.	July 28, 1865	Delaney House, D. C.	July 31, 1865...	Jackson,
31st S. S.	Jan. 9, 1865	Detroit	July 1863	Charleston, S. C.	Sept. 30, 1865	Charleston, S. C.	Oct. 17, 1865...	Detroit,
36th "	July 7, 1863	Dearborn	Mar. 28, 1864	"	"	"	"	"
102d U. S. C. T.	Feb. 17, 1864	Detroit	"	"	"	"	"	"

OFFICERS AND MEN WHO WERE UNDER THE FLAG OF
THE UNION 1861-65.

[illegible]

OFFICERS AND MEN WHO WERE UNDER THE FLAG OF
THE UNION 1861-65—CONTINUED.

REGIMENTS.	OFFICERS.			MEN.			TOTALS.		
	Killed in Action.	Died of Wounds Rec'd in Action	Died of Disease.	Killed in Action.	Died of Wounds Rec'd in Action	Died of Disease.	Total Officers.	Total Men.	Total Officers and Men.
Co. C, 70th New York Infantry.....				15	3	7	.....	25	25
In other Companies serving in regi- ments of other States and in the regular army so far as reported..								14	*14
Taken from Roll of Honor U. S. Quartermaster's Department as belonging to Michigan Regiments, but not found on regimental records.....								498	*498

RECAPITULATION.

Officers killed.....	177	
Officers died of wounds.....	85	
Officers died of disease.....	96—	358
Men killed.....	2,643	
Men died of wounds.....	1,302	
Men died of disease.....	10,640	
	*14	
	*498—14,497	
	14,855	

“ Columbia e'er will know you
From out her glittering towers,
And kisses of love will throw you
And send you wreaths of flowers;
And e'en in realms of glory
Shall shine your starry claims;
Angels have heard your story,
And God knows all your names.”

While flags and banners are made the medium of expressing to troops gratitude for their patriotism, and the expectation of their gallant services, as well as their acknowledgment, costly monuments and columns are reared to commemorate their sacrifices.

From the earliest periods in all civilized nations and communities, monuments have been acknowledged evidences of an enlightened, grateful and generous people, and are so considered at the present day. Some are reared as mementoes of great national events, or as recognitions of achievements or acknowledged worth of individuals; others to honor the memories of patriots who have made sacrifices for their country, while the most numerous are raised to mark the last resting place of the departed, and to inscribe thereon their brief and latest history.

Some monuments, commenced with a national purpose, are in ruins ere completed. Others, undertaken by populous states or cities, are left unfinished, both speaking loudly of neglect, if not disgrace, and at least are evidences of a cooled ardor in the cause, or of a wanton forgetfulness of the worth or valor which they were intended to perpetuate; while the humble stone, with the tender and loving inscription of the widowed mother to her departed child, is complete and stands intact, the consummation of a fixed and hallowed purpose.

With a grateful appreciation of the services and sacrifices of her sons who gave up their lives, the dearest boon to man, and of those who risked them in the same glorious cause, Michigan, early in the war, determined to perpetuate their memories and heroic deeds, by the erection of a monument chiseled from the white marble or beautiful granite of America, elaborately and appropriately finished with bronze or marble figures.

In June, 1867, numerous designs were submitted to a com-

mittee, whose choice was made of that presented by Randolph Rogers, the eminent American sculptor. In due time the monument was completed in Detroit as originally designed, and at a cost of \$70,185.91, raised by contributions throughout the State. It is constructed of gray granite, while its ornamental decoration is of gold bronze. Its dedication is: "Erected by the people of Michigan in honor of the martyrs who fell and the heroes who fought in defence of Liberty and Union."

"The whole—it speaks in volumes of the past—
Of war's dread tempest and the fiery blast;
Of mail-clad labor, brave the sword to draw,
To vindicate the right, maintain the law."

The American sanitary measures were undoubtedly the most extensive and liberal ever undertaken by a people in any war, and accomplished much in ameliorating the sufferings incident to a great and prolonged war. Michigan was not slow in entering into the beneficent effort.

In the autumn of 1861 the "Michigan Soldiers Relief Association of Washington," composed of warm-hearted Michigan men in that city, commenced its humane work and continued it until September, 1866. Its resources were assessments of the membership at the start. They were, however, in a short time relieved by contributions made by the people of the State, amounting to \$24,902.24 in the aggregate, which was expended in the care of Michigan soldiers in hospitals in Washington and in the field.

The "Michigan Soldiers Aid Society" was formed in Detroit in November, 1861, being a branch of the "United States Sanitary Commission," and continued until June, 1866. Its resources were from various contributions in the State, amounting to \$28,129.44, together with a large amount of goods and useful articles expended for the use of the sick in hospitals in the State and at the front, including \$11,422.36 for "Soldiers' Home" in Detroit.

The "Michigan Soldiers' Relief Association" was organized in Detroit in April, 1862, and continued while the war lasted. This association directed its efforts to collections throughout the State of large amounts of necessary supplies, including underclothing, sending them to the front for the use of the

soldiers sick or well; and in addition it expended \$3,600 for useful purposes.

In 1864 those associations were most opportunely assisted by the "Ladies' Soldiers' Aid Society of Kalamazoo," by way of a "State Sanitary Fair" at Kalamazoo in September of that year. It was managed with much good judgment and energy, ending in complete success, netting \$9,618.78 over all expenses.

"In the beauties of lilies, Christ was born across the sea,
With a glory in his bosom that transfigures you and me;
As He died to make men holy, let *us* die to make men free."

The "Christian Commission" was a powerful auxiliary in sanitary operations, possessing immense strength and energy. It was most successful as a sanitary organization, uniting therewith the religious instruction and admonition of good men to the living when opportunity offered, while kindly consolation was afforded in their last moments to those who were passing away.

The Michigan branch of the Commission commenced in June, 1863, but was practically in operation but one year. Its funds were received principally from church collections. Its receipts were \$21,725.20, most of which forwarded to the central office in Philadelphia; stores estimated at \$10,000 were sent direct to the army.

The plan of the Commission was to minister both to the mental as well as the bodily wants of the army, sending the living preacher, the bible, and the religious newspapers of all denominations, while all the time it ministered to the temporal wants of the soldier, and worked for the comfort of the sick, wounded and dying. It searched for the wounded amid the thickest of the battlefield, and never left him until he was discharged from hospital, or a prayer consigns him to a soldier's grave.

Michigan sent to the front fifty-six clergymen and laymen, who labored each six weeks without any compensation except the consciousness of doing good.

At the session of 1867 the Legislature appropriated twenty thousand dollars to maintain for two years a temporary "Soldiers' Home" at Harper hospital, in Detroit, for disabled destitute soldiers, managed by the State Military Board. At the session of 1869 another appropriation was made for its

support for two years more. Since then appropriations have been continued and the Home is still in existence.

The Potomac army, under command of Lieutenant General Grant, crossed the Rapidan May 5, 1864, and from that day onward to about the 10th day of June, there occurred a nearly continuous succession of battles, so frequent that it was a common remark of the soldiers returned from that campaign that it seemed to them like *one continuous battle*.

Certain it was that the entire region, from the Rapidan to Cold Harbor, was a continuous battle ground. Three hundred thousand men in daily and nightly conflict for thirty-five days, produced of necessity a host of wounded, who demanded from not only the Government, but the people, every possible assistance.

Notwithstanding the medical department of the Government exercised all its accustomed foresight, and made judicious use of its immense resources with advanced preparations to meet coming emergencies, there were times during the war when great battles came thick and fast, when rebel bullets felled men like the grain in harvest, that it failed in supplying a sufficiency of surgeons in the field, and extreme suffering threatened the sick and wounded. This deficiency, however, was readily and cheerfully made up by the voluntary service of the medical men of the land. The surgeons of Michigan were not behind in the humane work, and without fee or proffer of reward, never failed, although at a great sacrifice, in promptly and substantially responding to the emergency, and thirty-three surgeons of the State, together with five medical students from Ann Arbor, volunteered their services and reported to the Surgeon General of the army, who assigned to duty at various points at the front, most of them remaining so long as their services were deemed necessary, without any compensation or hope of reward except that which comes from a sense of having served their country in a time of great need, and performed a Christian duty in alleviating much suffering of their fellow man.

The most momentous period in the history of Michigan was the war of the rebellion, embracing the home work of the people; and although that may be looked upon as insignificant when compared with the extent and value of the labor of her

troops in the field, and the great sacrifice of life made by them, yet it was one of great magnitude. The old proverb that "constant dropping wears the stone," did not seem to be applicable, for could the continuous drain on the people of Michigan for men and means have worn out their patriotism, such a result would have been surely accomplished. For, aside from the incessant labor of the people in raising men to fill their quotas, to save their communities from the odious drafts which continually threatened them, involving much perplexing anxiety, there were many petty annoyances, great sacrifice of time, together with large expenditures of money by State, counties and townships, and also by individuals, which all combined rendered the burdens and cares of the people at times so heavy as to be almost unbearable. Still the astonishing statements made below, covering over fourteen and a half million of dollars, raised and applied by Michigan for war purposes, although couched in silent figures, speak most eloquently and earnestly of the great sacrifice and the unbounded patriotism of her people.

In accordance with law the Quartermaster General of the the State expended in 1863 \$134,250; 1864, \$867,959; 1865, \$383,076; 1866, \$438,500; 1867, \$11,700; 1868, \$18,623; 1869, \$28,850; 1870, \$26,400, up to and including 31st of July, amounting in the aggregate to \$1,909,408.

Since then there has been paid from July 31st, 1870, up to and including September, 1880, \$18,450, making \$1,927,858 of a total of bounties.

There was also disbursed \$60,000 as premiums for the procurement of recruits.

Aside from these amounts this department expended for war purposes \$815,000, making a total of \$2,802,858 disbursed by the State.

The following are the aggregate expenditures and liabilities of the various townships, cities and wards of the counties in the State for war purposes, made up from statements of the proper officers, rendered in 1866:

Allegan, \$188,898.49; Alpena, \$9,781.98; Antrim, \$4,638; Berrien, \$257,416.97; Branch, \$230,086.65; Barry, \$180,641; Bay, \$61,267; Calhoun, \$354,432.32; Clinton, \$135,936; Cass, \$196,239.86; Chippewa, —; Cheboygan, \$1,525; Delta,

\$1,200; Eaton, \$175,363.58; Emmet, \$50; Genesee, \$150,-488.75; Gratiot, \$23,527; Grand Traverse, \$12,990.54; Hillsdale, \$282,449.21; Houghton, \$39,152.71; Huron, \$17,230; Ionia, \$182,888; Ingham, \$203,985; Isabella, \$5,775; Iosco, \$4,900; Jackson, \$439,325.10; Kent, \$167,550.50; Kalamazoo, \$383,416.61; Keweenaw, \$1,000; Livingston, \$144,379.22; Lapeer, \$129,674.89; Lenawee, \$544,557.75; Leelanaw, \$4,845.52; Midland, \$12,598; Montcalm, \$44,861.20; Muskegon, \$43,604; Macomb, \$289,029.69; Mecosta, \$3,340; Monroe, \$135,180.69; Manistee, \$15,476; Manitou, —; Mackinac, \$6,727.50; Mason, \$807; Marquette and Schoolcraft, \$3,000; Newaygo, \$12,004; Ottawa, \$148,523; Oakland, \$586,556.98; Oceana, \$14,692.93; St. Clair, \$233,291.90; St. Joseph, \$557,958; Saginaw, \$158,099.59; Shiawassee, \$167,203; Sanilac, \$95,794.29; Tuscola, \$67,631.96; Van Buren, \$115,637.90; Wayne, \$660,554.88; Washtenaw, \$458,563.54. Total, \$8,157,748.70.

Amount expended by each county of the State from 1861 to 1867 for the relief of soldiers' families, under the provisions of the Soldiers' Relief Law, approved May 10th, 1861:

Alpena, \$8.80; Allegan, \$80,985.72; Antrim, \$666.11; Bay, \$21,991.54; Barry, \$86,598.15; Berrien, \$131,924.45; Branch, \$69,121.20; Calhoun, \$200,193.66; Cass, \$80,883.46; Clinton, \$67,443.75; Cheboygan, \$368.92; Chippewa, \$1,032; Delta, —; Eaton, \$62,103.69; Emmet, \$1,948.40; Genesee, \$89,087.12; Gratiot, \$8,875; Grand Traverse, \$10,636.81; Hillsdale, \$90,155.96; Houghton, \$8,419; Huron, \$23,033.50; Ingham, \$110,547.09; Isabella, \$4,680.45; Ionia, \$31,500; Iosco, \$1,000; Jackson, \$129,401.25; Kalamazoo, \$119,984.79; Kent, \$76,311; Keweenaw, \$3,620; Lapeer, \$75,000; Livingston, \$34,500; Lenawee, \$145,226.20; Leelanaw, \$6,487.89; Macomb, \$110,339.26; Mecosta, \$9,280.09; Mackinaw, —; Midland, \$6,550; Manitou, —; Mason, \$3,200; Manistee, \$9,620; Muskegon, \$20,000; Marquette, \$7,989.16; Menominee, \$390; Monroe, \$143,762; Montcalm, \$40,000; Newaygo, \$14,516.72; Ottawa, \$56,616.08; Oceana, \$18,368; Ontonagon, \$4,747.02; Oakland, \$127,993.38; Sanilac, \$73,111.33; Shiawassee, \$50,645; Saginaw, \$81,000; St. Clair, \$89,427.99; St. Joseph, \$96,214; Tuscola, \$51,987.22; Van Buren, \$99,511.81; Washtenaw, \$155,043.15, and Wayne, \$547,200. Total, \$3,591,248.12, while \$14,569,852.82 was the total public expenditure of the State, without making any ac-

count of the large sum which the war must of necessity have cost private individuals in money and articles contributed for sanitary purposes and other contingencies.

The amount of \$594,600 was paid by individuals into the Treasury of the United States in accordance with law, by drafted citizens of the State as commutation.

At the outbreak of the war all the uniformed companies then in the State volunteered for service; of these two in Detroit reorganized for home duty, the Detroit Light Guard, Scott Guard, while the Lyon Guard, also in Detroit, was raised and mustered for that duty, and all served in the State during the war. These companies were held in readiness to quell any disturbances in the community, and rendered valuable service in that respect and in guarding against raids by Southern rebel refugees from the borders of Canada, threatened from time to time to be made on Detroit and along the frontier line. They also aided much in sustaining a confidence of security of life and property among the inhabitants, especially while the raids referred to were being threatened.

The war had thrown a damper on home service, and but little progress was made in organizing companies, but few seeking admission, so that from the commencement of the war up to 1873 only six companies had been received into service. In that year an allowance of uniform was made by the State, which gave some impetus to military affairs, and in 1874 they had increased to sixteen companies, sufficient from which to organize the 1st Regiment, Colonel W. H. Withington, of Jackson, and the 2nd, Colonel I. C. Smith, of Grand Rapids.

About this time the State commenced to look upon the military in a more favorable light, and in 1875 authority was given by the Legislature to levy for its support in each year a tax of ten cents per capita on the preceding vote for Governor, and during 1875 eight companies more were accepted and mustered into service, when the organization of the Third Regiment, Colonel O. F. Lochhead, of Flint, was accomplished.

In 1879 the tax was made three and one-half cents per capita on the last preceding census. These allowances gave a new life to the military of the State, and a recognition and encouragement so long denied.

On July 15th of that year, a brigade was formed of the

three regiments with Brigadier-General W. H. Withington as Commander. Up to this time the pressure for the admission of companies had been strong and urgent, and sufficient had been accepted to warrant the organization of a battalion of four companies at Detroit in 1882, in command of Lieut. Colonel Eugene Robinson. In the meantime a battalion of two companies, taken from the Third Regiment, had been made up at Marquette to be commanded by the ranking Captain; it was, however, soon broken up and the companies again merged in the Third Regiment. In 1885 six additional companies were admitted and assigned to the First Battalion, which was then designated as the Fourth Regiment, with Colonel Robinson commanding.

Thus it will be seen that the State troops now consist of four regiments of infantry formed into a brigade. They are well officered, armed and equipped, and ready for any service. A comparison of their present condition with that of a few years ago exhibits a degree of rapid and substantial improvement in all that pertains to their organization, discipline and drill; while it is most satisfactory to notice that, at all times, when their services have been required, they have been rendered in such a manner as to receive the approval of the civil authorities and the people of the communities where they have been on duty; and that they are now recognized as a permanent part of the State government, creditable, effective and reliable, receiving the countenance and support of the people of the State.

THE EARLY LEGISLATION OF MICHIGAN.

INSERTED BY KIND PERMISSION OF THE AUTHOR.

HON. ALPHEUS FELCH.

It was my fortune to be a member of the first and second Legislatures of the State of Michigan. The first Constitution of the State was adopted by a vote of the people on the first Monday of October, 1835. Under its provisions the Governor and members of the first Legislature were elected the same day, and the first session of the Legislature was held on the second day of November following. The meeting took place at Detroit, in the building erected by the United States for the Territorial Council, and which, for twelve years afterwards, served the State for its legislative halls.

Here the first Legislature was organized and the official oath administered to its members. Here in joint assembly of the two houses the votes for Governor and Lieutenant Governor were canvassed, and they took the official oath prescribed by the Constitution. Here the State organization was perfected. Here a new Commonwealth had its birth and waited only the action of Congress to take its place in the galaxy of States which, together, constitute the great American Nationality. I scarcely need to say that the occasion was one of great interest to the people of Michigan. The initiatory government of a territorial organization was about to cease. The days of pupillage were maturing into the freedom of manhood, and visions of the glorious future of the new State were bright before every eye. A Constitution prepared by delegates of their own choosing and adopted by their own free votes was henceforth to be their fundamental law, and under it legislative and executive officers of their own selection were to be the guardians of their common interests.

More than fifty years have passed since the proud day to which I refer, and you will not wonder that one who participated in its events, and whose bosom glowed with the ardor

then kindled in every breast, looks back with a proud and beating heart to this birthday of our Commonwealth. Nor is it in the primal days of our State's history, or in the time of our first executive Legislature and judicial offices alone that we may justly glory. Every day of the fifty years that marks the history of our Republic I have watched carefully the events which have occurred in its progress—its discouragements, its changes and marvelous growth—and I cannot but feel in my heart that within this half century no State in the Union, and certainly no political organization on earth, outside the Union, has made truer or greater progress, or has more reason to be proud of the record made by the various departments of its government.

There are some peculiarities connected with the early legislation which we must not fail to notice. By the provisions of the Constitution all laws then in existence in the Territory of Michigan, not repugnant to the Constitution, were to remain in force until they should expire by their own limitation, or be repealed by the State Legislature, and all civil and military officers holding in the Territory under authority of the United States were to continue so to act until superseded under the authority of the State. Thus the new State started on its course as an independent Republic, with laws already matured and in force, and with officers already sworn to carry them into effect. The machinery might at the first view have seemed sufficient for the new organization, and further acts of legislation unnecessary. But this was not so. The territorial laws were crude and imperfect. They were enacted for the small border settlements in a wilderness country, where the footstep of the immigrant had just begun to press the virgin soil and the forest to yield to the axe and the plow of the settler. But a change had commenced and was in rapid progress. Immigration was pouring in with a tide irresistible and, day by day, growing stronger and stronger. The new inhabitants brought with them the arts of domestic life and the refinements of civilized and polished society; and, above all, that spirit of energy and enterprise which was able to build up a new State and crown it with the glory of a free Republic. Few of the old laws originated in an assembly chosen by the people of the Territory, and not one of the officers received his authority by

popular election. The popular sentiment which induced the making of the Constitution and the organization of the State Government under it, demanded larger and broader legislation and institutions of a more popular character. The duty of supplying these, and of enacting laws in accordance with this sentiment, and in aid of the progress and consolidation of the State on the basis of permanent prosperity, was thrown largely on the first Legislature and to its immediate successors.

The first Legislature met on the second day of November, 1835, under peculiar circumstances. The Legislature, if it was anything, was a part of an organized government—of a government possessing all the powers of an existing organized State, yet it was within the limits and jurisdiction of the United States. But the Government of the United States recognized no such State as a member of the Federal Union. True the State Constitution had been presented to Congress and an appeal made for admission into the Union, but the unfortunate collision with the State of Ohio relative to the southern boundary of Michigan caused delay in the desired recognition. Congress, however, by an act of June 15th, 1836, approved the State Constitution, and recognized the right of the State to admission, yet imposed a condition of formal assent to the change of the boundary line as demanded by the State of Ohio, and refused admission until such assent was given. This assent was subsequently given in an informal but acceptable manner, and on the 25th of January, 1837, the admission of the State into the Union “on an equal footing with the original States” was formally declared by an act of Congress. Thus from November 2, 1835, when the Legislature was organized under the Constitution in Detroit, until the final act of admission by Congress on the 26th of January, 1837, a period of one year and about three months, the condition of the State was most anomalous. Two jurisdictions existed in apparent conflict. The territorial jurisdiction was not formally withdrawn by the United States. The Territory continued to be represented in the House of Representatives by her delegate: John S. Horner was nominally Acting Governor of the Territory. In the meantime the State organization was perfected and the Government put into complete operation. In November, 1835, two United States Senators were elected

by the Legislature, and in the month previous a Representative in Congress had been chosen by the people. The Judicial Department of the State was put into full operation, and in 1836, county, State and township officers were elected and assumed the duties of their respective offices. Thus the State was fully organized and her officers administering the State Government, while the territorial organization under the general Government had not been withdrawn, nor any assent to the antagonist State Government given by Congress. The two jurisdictions were incompatible with each other, and it is surprising that during a period of more than a year while they continued, no important act of collision or conflict occurred. Great good sense and forbearance on all sides, and especially on the part of the President of the United States, alone, could have avoided it. The provision of the Constitution which continued in force the territorial laws and retained the territorial officers in authority until a change should be made under the authority of the State did much to avoid collision and trouble. The old territorial officers continued to perform their offices as before, and neither they nor others cared to determine whether their authority came from the State or the General Government. The old territorial laws which by the Constitution were continued in force, were still the laws of the land, and no man cared to discuss the question whether they derived their validity from the territorial or State organization. Still the condition was most remarkable—a State within the territorial jurisdiction of the General Government acting with perfect independence—a full-fledged State within the limits of the Union, yet not a member of the Union, nor recognized by it—a Government under a State Constitution within a Government organized under the authority of the United States. It is easy to see in such a state of affairs, how many questions might have arisen which the most astute casuist would have found it difficult to solve, and over which the keenest civilian and the wisest statesman might have pondered in doubt. Luckily there was no disposition anywhere to raise mooted questions, or to encourage controversy or to bring on collisions. The first Legislature had no hesitancy in putting into operation the entire machinery of the Constitution or in enacting laws to promote the prosperity and growth of a per-

manent republic. It must be confessed, however, that the history of the birth and early days of the State exhibits the most bold and chivalrous action on the part of our early statesmen, and the most fearless and determined energy in the men who laid the framework of our ship of state and sent it on its prosperous voyage.

The first session of the Legislature attempted little more than to inaugurate the executive branch of the government and to elect two United States Senators. But at the adjourned session in February, 1836, the work of legislation was entered upon in good earnest. Aware of the delicate condition of affairs, the evident conflict of jurisdictions and the possibility that it might lead to serious collision between the authorities of the United States and those of the State, they proceeded carefully to consider the subject through a committee, and resolved "to proceed at the present session to pass all laws required by the interests of the people, and to secure to them the rights guaranteed by the Ordinance and the Constitution of their own adoption." A respectable minority in the Senate filed their protest against such proceeding on the ground that the President had officially communicated to the executive-elect of the State his full determination to maintain the territorial authorities and Government in all its parts, and that every act passed by the Legislature must inevitably produce a collision with the authorities of the general government. But the Senate resolved to make no delay in the work, and the House tacitly acquiescing, the work of general legislation was entered upon in good earnest. During this session many new counties and townships were organized, and villages incorporated. Authority was given for building and improving certain rivers and for laying out State roads. Seven banks and twelve railroad companies were incorporated. Provision was also made for the election of all elective officers provided for by the Constitution or the laws, and their duties and compensation were prescribed. The effect of these and other enactments was speedily to retire all officers who held under territorial authority and to supersede all territorial laws and to put the new State organization into full and complete operation.

But the laws of the early Legislatures did more than this. There is abundant evidence in them that the members took no

narrow or unworthy view of the work they were chosen to perform. He who is called to participate in the foundation of a new Republic, is called to a most noble and dignified work. He labors not for the present alone, but for ages and ages yet to come. The work of our early Legislatures was in its immediate application for a small population, and for a region of country almost a wilderness, with few industrial pursuits, small available resources and limited business operations. But they saw beyond all this. A wider vision opened before them. If it is the immortality of man that gives dignity to manhood, so it is the perpetuity of statehood that gives dignity and importance to a State.

They laid the foundation stones with the vision of the future bright before them, and in the hope and undoubting belief that they built for all time, and that generations yet to come would enjoy rich fruit from their labors.

How wise, both for the present and the future, this early legislation was, is clearly exhibited by reference to some of the statutes.

Here was laid the foundation of that grand system of education which has so nobly developed itself within the last fifty years. The Constitution of 1835 provides for the appointment of a Superintendent of Public Instruction, whose duties should be prescribed by law, and made it the duty of the Legislature to encourage "the promotion of intellectual, scientific and agricultural improvement." It required the establishment of common schools and libraries. Into the hands of the Legislature was committed by Congress the charge of the section of land in every township in the State for the use of schools, and the seventy-two sections of land granted for the use and support of a University. With these funds devoted to educational purposes, of little present, but of great prospective value, the foundation of the present system of education was laid. The report of John D. Pierce, Superintendent of Public Instruction, made to the Legislature at its session in January, 1837, is an admirable and most exhaustive discussion of the great subject of popular education, with clear and practical views for carrying into operation the provisions of the Constitution, and suggestions as to the necessary legislation on the subject. The Legislature caught the spirit, and

embraced the broad views of the report, and its recommendations were adopted. It gave the new State at once and from the first an educational system, then, if not now, far in advance of that of any of the older States. I know of no other State where the education of all its population was, at that time, treated as a great subject of State importance, the details of its various branches defined, and an officer under the commission of the Republic charged with its general care and oversight, and required to report periodically to the legislative department of the Government.

In other States education was committed largely, if not entirely, to local and district schools, private schools, academies and colleges; but these were detached organizations, doing certainly much true and faithful work, but greatly wanting in the coherence necessary to form an effective and perfect system, with that superintendence over all which so broad a subject demands. The system here adopted contemplates nothing more or less than the education of all. Beginning with the lowest grade, it gradually rises until it terminates at the highest in the University. The success of this system has drawn to it the marked attention of educators and Statesmen elsewhere, and has elicited universal commendation. The University now standing at the head of the system, now less than half a century in operation, already takes its place beside the old institutions which have enjoyed the growth of centuries, and shares with them the honors of literary eminence, while it was among the foremost to enlarge and liberalize the curriculum, and to welcome within its halls science and knowledge of the arts and industries of practical life.

The judicial system which was adopted by the Constitution and by the early Legislatures was eminently fitted to the circumstances of the times and proved highly successful in promotion of the public interest. The population of the State was at that time small and business transactions neither extensive nor complicated. Three Judges appointed by the Governor, by and with the advice and consent of the Senate, constituted the Supreme Court, under the provisions of the Constitution; but under the same authority the Legislature added a Court of Chancery. Circuit Courts were held in each of the

counties by one of the Judges of the Supreme Court, assisted by two associate Justices elected by the people. Thus justice was brought to the door of all litigants, and it was ably and impartially administered. But this organization, admirable as it was for the time being, was insufficient to supply the needs of a largely increased population and the necessarily large and complicated business of later times. Nothing perhaps can exhibit in a stronger light the marvelous growth of the State and the increase of its business interests, than the fact that the Supreme Judges, although relieved from all Circuit Court duties and increased in numbers, are continually burdened with heavy dockets, while the Circuit Court business then required to be performed by the three Supreme Judges is now committed to twenty-eight Circuit Judges.

Another of the measures of importance in early legislation was the adoption of a system of internal improvements. In 1837, two bills having this object in view, were simultaneously before the Legislature, and respectively became laws on the 20th and 21st of March in that year. The first of these provided for the construction of three railroads across the State, to be known as the Central, the Southern and the Northern railroads, although for the last a canal might be substituted in whole or in part. The other act authorized a loan of the credit of the State, of a sum not exceeding five millions of dollars for the purpose of meeting the expenses. This loan was subsequently obtained and the construction of the works commenced and prosecuted under the charge of commissioners appointed for the purpose. The State held the roads until the spring of 1846, when they were sold and two and a half millions of dollars paid into the treasury for them.

The legislation and the project involved in it have been the subject of much criticism, and certainly it was a most expensive undertaking for a new State with a small population and few available resources, and for some years the outstanding warrants of the State, issued for labor and materials in constructing the works, were unpaid and afloat. But we must consider the circumstances of the times before we censure. The complete adaptability of the wondrous power of steam to locomotion and draught by railroads was a discovery comparatively new. Not more than twelve hundred miles of railroads

had been constructed at that time in the United States, and these were chiefly in the vicinity of the Atlantic coast, no one of them approaching nearer to Michigan than the eastern portion of the State of New York. But the public mind was aroused on the subject of the newly discovered power, and its applicability and the incalculable benefits to be derived from them. Legislatures were everywhere besieged for charters, and our own State, as we have seen, was no exception. Capitalists and moneyed men were ready to invest their means, and asked only the boon of chartered privileges and powers. The business of ruined manufacturers and dilapidated cities was to be revived, and the prairie and forest lands of the Western States, it was fondly dreamed, needed only railroads to bring trade, population, wealth and the refinements of civilization. It was a craze almost universal, and yet at the bottom of it all lay much truth and sound practical reasoning.

It was under these circumstances that the proposition for the railroad project and the five million loan was made. The bill, as reported by the Committee in the House, provided for only one road, that running from Detroit west through the second tier of counties from the southern border of the State. I remember very distinctly when the proposition was made to amend the bill by substituting the three roads in place of one. It created great alarm among the special friends of the bill. They looked upon it as indicating a design to defeat the entire project, and they well knew that a combination of the votes north and south of the line would seal its fate. But in this they were mistaken. The proposition was made in all sincerity. The proposed loan was large and they reasoned that as near as possible the benefit of it should be given to all who, as members of the State, were to bear the burden of paying it.

The two tiers of counties lying on the north and south of the counties through which it was proposed to construct the road, a fertile region already filling up with immigrants and developing rich resources, had, in their judgment, equal claims with the others to participate in the benefits of the public works. The rich and now important portion of the State north of the counties above referred to was then, with rare exceptions, an unbroken forest and little known. The project of the railroads and the loan was accepted with approbation by the public, and

indeed I knew of but very few in the Legislature or out of it who doubted the propriety or the prudence of the measure.

And now after the lapse of fifty years, we may well ask the question whether it turned out well or ill for the State? Certain it is, that the making of the roads gave a marvelous impulse to immigration and to business enterprises of every kind, and placed Michigan at the head of the list of western States in energy and successful prosperity and in the attractive character of its institutions and population. And when we consider what an element of prosperity railroads have become, and how largely they have aided in developing the country, how intimately they are connected with all important business transactions, how efficient and successful a part they have acted and are still acting in the growth and prosperity of our State, he must be a bold man who should assert that the money was thrown away or the expenditure without adequate return. Besides, we must remember that the construction of the State roads was but the beginning of a broader system which, without aid from the public treasury, has since extended itself over the entire State with some seventy district roads and their branches and some five or six thousand miles of track, covering the entire surface as with a network of iron and constituting an element of prosperity exhibited in almost every locality without which our present high position must be lost.

I must refer to another act of early legislation which opened the way for development of one of the resources of our State, now the subject of one of the great industries of our people and a source of much wealth. By a statute passed February 23d, 1837, a geological survey of the State was provided for and the Governor authorized, by and with the advice and consent of the Senate, to appoint a State geologist. At this time little or nothing was known of the geological character of the State. The lower peninsula was understood to be founded on a bed of limestone, with little or no variety in its characteristics, and no value in its deposits; and of the upper peninsula nothing was known and nothing expected from it. The appointment of Dr. Douglas Houghton to the position of State geologist was a most fortunate one. A man of high scientific attainments, a true admirer of nature, whether in the animal, vegetable or mineral kingdom, an astute explorer of

their secrets, an indefatigable toiler in his investigations, he was just the man for the duties required. For about ten years he devoted himself assiduously to his task, and died in the midst of his labors and at the post of duty. The result of this legislation has been highly important to the pecuniary interests of the State. The upper peninsula, previously regarded as worthless, was found to contain rich deposits of mineral wealth, and the business of mining has become of immense importance. The iron mines of Lake Superior have given an annual yield sometimes as high as fourteen millions of dollars, and the copper mines, confessedly the richest in the world, have given a yield of more than eight millions of dollars in a single year. In the lower peninsula the development of saline waters coursing through the earth, at first indicated only by the track of wild deer to the few salt springs, has, through the agency of the State geologist, ripened into a business employing many laborers and much capital, and returning generous profits. In the production of this industry, Michigan is first in the list of States, with an annual yield of not less than three millions of dollars. The progress of discoveries since the days of our own first State geologist has enlarged his work, and made further valuable developments. We have now not merely the salt springs inviting the wild deer, nor the brine percolating through the earth and brought from great depths, by artificial means, for the manufacturers' use, but some portions of the country are found to rest on beds of rock salt, deposited in the days of uncertain antiquity, when the briny waters of the ocean flowed over the basins of the great lakes and covered our two peninsulas.

Another act of early legislation may be cited as exhibiting the peculiar characteristics of the times and the uncertainty of the results of well-intended enactments. I refer to the general banking law passed in March, 1837. It had its origin in the general derangement of all business affairs, the failure of some of the strongest mercantile firms, and the dark cloud of depression and gloom which hung over the community and seemed to shut out every ray of light or hope for the future. The cry of hard times was loud, and came from every quarter, and many sincerely believed that the remedy would be found in the multiplication of banks and flooding the country with

bank bills. Under the pressure of discouragement and panic wise men do not always act wisely. The general banking law was supposed by its friends to afford a remedy for all these evils, and this belief was almost universal. Indeed, no proposed measure in the Legislature was ever more popular, and in that body it had almost a unanimous vote. The opponents of the bill, of whom I was one, never exceeded three in number in the house, and the record shows that no more than two of them ever voted together in any stage of the progress of the bill to its final passage. A feeble minority was this, but the sequel showed that their apprehensions of disaster in the future were not groundless. The business of the country continued to become more and more deranged; banks were everywhere failing or suspended, and the panic seemed universal. Three months after the passage of this law Governor Mason convoked the Legislature in extra session, and gave in his message a graphic account of the deplorable condition of business and pecuniary affairs, for the consideration of which he had called them together.

In the meantime banks without number had been organized under the law throughout the State—in all the villages and in out-of-the-way places, chosen for their remoteness from the intrusive bill holders. With a nominal capital of millions, they had little to show in their vaults; with discounted paper to a large amount they often had only the worthless promises of insolvents; with reported specie amounting to many thousands they frequently had only a few dollars, or, perhaps, coppers, or boxes partly filled with worthless rubbish, or a fraudulent certificate from some institution equally insolvent as themselves, falsely asserting the deposit of coin held subject to their order. The bank commissioners became familiar with certain peripatetic coin traveling from bank to bank, and borrowed at a specified price per day, designed to be returned after an examination had been had, but speedily detected by the bank commissioner. Meantime the country was flooded with bank bills—some beautiful pictures in the highest art of the most skillful note engraver—some the blurred daub of the coarsest wood-cut; but all for a time passed into the currency and was paid out and received in the business transactions of the country. But the bubble soon burst. It was soon learned

that paper promises, from whatever source emanating, in whatever form issued, and by whatever signatures authenticated, can never constitute a safe currency, unless behind it lays the means for its ready redemption and the financial skill and sterling integrity which alone can maintain its credit. The currency rapidly depreciated and soon became worthless. The legislation which caused its production was ill-advised and unwise, the times were unpropitious, and the loss to the community large; but luckily it fell upon a young and vigorous people, and a few years of prudent economy and vigorous toil repaired the injury and restored their former prosperity.

I have thus referred to the early legislation of Michigan as laying the foundation of the subsequent wonderful growth and advancement of our State. At the time of the adoption of the Constitution of 1835, the population of the State did not much exceed one hundred thousand, now it numbers little less than two millions. Detroit was then its only city; now between forty and fifty incorporated cities exist. The sixteen counties of 1835 have increased to forty-six. A single member then represented the State in Congress; now eleven share the burden between them. Thirty of the present counties were then a wilderness without inhabitants; now the forests have largely given place to cultivated fields and the habitations of intelligent families. No large manufacturing establishments then existed: now they are numbered by hundreds. No railroad tracks then pressed the soil; now there are five thousand one hundred and fourteen miles reaching every portion of the State. Then no mines had been discovered and the tool of the miner was unknown; now the mines are counted by hundreds, and the yield of copper and iron is abundant and richly rewards the capitalist and the laborer. All this, and much more, is the growth of fifty years which have passed over us since the sessions of the first Legislature.

As I refer to the acts of the early Legislatures, memory brings to my mind the men themselves who were the actors in the scene. They were in the full vigor of manhood, robust, active and energetic men; patriotic and zealous to do their State good service; men of great good sense and much practical knowledge, they always looked to the matter rather than to the form, and scrupulously followed their own convic-

tions of right. In the legislative sessions every day was one of business. Speech-making was at a discount. The members were generally thinkers and actors, but not talkers. Thought, deliberation and judgment constituted their qualifications for legislative duties, and they had neither time nor taste for harangue or speech-making. So small a part did the latter play in the proceedings that I believe not a speech can be found reported in the newspapers of the day. Arguments were not wanting when occasion required, but they were always pointed and couched in the briefest terms.

The work of these earliest Legislatures was highly meritorious and will never cease to receive due acknowledgment. They laid well the foundation stones of the great State. But the labor and the praise are not due to them alone. You, gentlemen, their successors in the several Legislatures since their day, are sharers in the good work. No legislation, however wise, can remain like a marble statue, fixed and unalterable. Wise as were the early statutes, and fitted as they were to the condition of things at the time of their enactment, a change of circumstances, and sometimes an experience of their unfavorable operation have required a change, and this has generally been effected with care and prudence. In the rapid progress of improvements, in the great increase of population, in the ever progressive enlargement of business, in the busy activity in community of both the honest and the dishonest, the work of the Legislature is never ended. There are always rights to be protected, evils to be guarded against and great public interests to be promoted; and, although it is a wise rule which enjoins that legislation should be as little as possible, these always demand the care of the legislative branch of the Government and will continue to do so.

The first fifty years of our State have passed. Its history is written in letters of gold and cannot be blotted out. It is not for us who have seen all from the beginning, to remain until the great future of the republic shall be disclosed; but we can read the bright signs of promise that rest upon it, and join in the song of thanksgiving.

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